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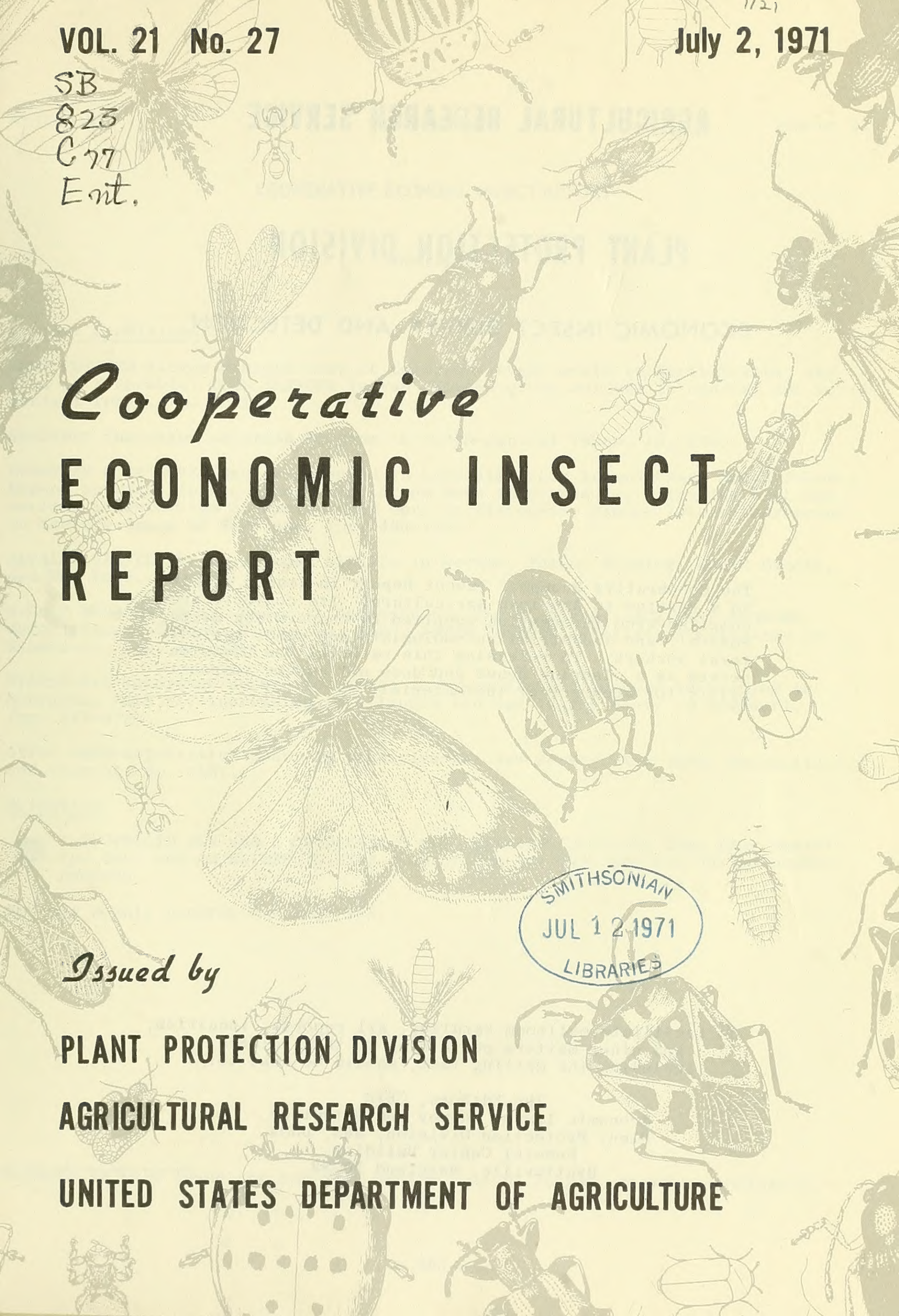

Cooperative ECONOMIC INSECT REPORT

SMITHSONIAN
JUL 12 1971
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PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 July 2, 1971 Number 27

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMY CUTWORM larvae damaged corn in Colorado, sugar beets in North Dakota, and flax in Minnesota. CORN EARWORM larvae damaged grain sorghum in central and north-central Texas. (p. 467).

GREENBUG increased on grain sorghum in north-central Texas. (p. 468).

EUROPEAN CORN BORER damage expected in untreated corn in southeast South Dakota. Expect increase in egg masses and larvae soon in Minnesota. Potential high for serious infestations on early sweet corn in Wisconsin. Damage levels increasing on Eastern Shore of Maryland. (pp. 468-469).

ALFALFA WEEVIL larvae damaged alfalfa in Nevada, Idaho, Wyoming, South Dakota, and New York. (p. 471).

SPRUCE BUDWORM damage heavy in Pennsylvania and Michigan. JACK PINE BUDWORM defoliation severe in Wisconsin. LARGE ASPEN TORTRIX defoliation extensive in Minnesota. (pp. 475-476).

STABLE FLY annoyance severe to cattle in Wisconsin and numbers increasing in Nebraska. FACE FLY increasing in Illinois and egg laying heavy in Missouri. (pp. 477-478).

GYPSY MOTH defoliation heavy in Pennsylvania, New Jersey, New York, Connecticut, and Vermont. (p. 480).

Detection

● A PIOPHILID FLY and a CHAMAEMYIID FLY reported for first time from Hawaii (p. 481) and an ERIOPHYID MITE from Oregon (p. 474) are new United States records.

For new county records see page 481.

Reports in this issue are for week ending June 25 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JUNE 28

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Afternoon and evening thundershowers produced most of the precipitation. It was the hottest week of the season in parts of the Nation.

PRECIPITATION: Thunderstorms occurred over the Great Plains and the Deep South early in the week. Hail, high winds, and heavy showers accompanied some of the thunderstorms. A thunderstorm with winds approaching 60 m.p.h. and hail as large as golf balls moved across Kansas City, Missouri, late Tuesday afternoon. Other thunderstorms with hail caused considerable crop damage in the Kansas City vicinity Tuesday. Most of the thunderstorms occurred in the afternoons and evenings and became less intense and more scattered in the early mornings. Some generous thundershowers occurred in the northern Great Plains late in the week. Weekly totals ranged widely from less than 0.10 inch to several inches. A number of locations in Texas received 24-hour totals ranging from 4 to 5 inches or more. Numerous locations in the Southeast received more than 3 inches during the week, while less than 1 inch fell at nearby stations. A large area from southern Wyoming to southern California and Arizona received no rain or only widely scattered light sprinkles.

TEMPERATURE: Most of the Nation averaged warmer than normal last week. A large area from Nevada to Indiana and from Montana to Arkansas averaged 3° to 6° or more warmer than normal. Three areas averaged slightly cooler than normal, the Far Northwest, Texas, and from Mississippi to southwestern Virginia. Summer heat continued over most of the Nation early in the week. Early morning temperatures ranged from the 50's over the northern border States to the 70's across the South. Afternoon readings were in the 70's and 80's in the North and the 90's in the South except in some southwestern desert areas where temperatures exceeded 100°. Needles and Blythe, California, registered 114° Tuesday afternoon. A warming trend over the West brought 90° heat to northeastern Washington Tuesday afternoon and to north-central Montana Wednesday. Maximums in several States reached 100° or higher on Tuesday and Wednesday. Miles City, Montana, registered 98° Wednesday afternoon. The heat over the central Great Plains became especially intense Thursday and Saturday. Maximums at Hill City, Kansas, averaged 105° from Wednesday to Saturday. Minneapolis, Minnesota, warmed to 96° Sunday afternoon and cooled only to 77° Monday morning, June 28. In some areas, last week was the warmest since August 1970.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - KANSAS - Moth flights still heavy at Manhattan, Riley County. (Bell). SOUTH DAKOTA - Late instars present under windrowed alfalfa in western Dewey County. Averaged one larva per square foot in some fields. (Jones). MINNESOTA - Occasional larva found in reed canary grass or alfalfa in southwest and central districts. Blacklight trap collections light for past 14 days. (Minn. Pest Rpt.). WISCONSIN - Late instars appeared in some fields of early peas and controls applied. Early instars appearing in alfalfa and peas. Earlier moth flight apparently undetected. (Wis. Ins. Sur.). MICHIGAN - Larvae reported in field of corn near Bellevue, Eaton County. (Cook). Growers should check corn and small grains for this pest. (Ruppel). Moth counts decreasing at all blacklight stations, indicating end of emergence. Larval populations near peak, problems in small grains should be evident. (Sauer). OHIO - Numbers of first-generation moths decreasing rapidly in blacklight traps. (Rings). Larvae damaging corn in Wayne and Columbiana Counties. (Blair, Rings). MARYLAND - Damage levels in corn and small grain dropped below economic thresholds statewide. Spring infestations heaviest with past 4 years. (U. Md., Ent. Dept.).

ARMY CUTWORM (Euxoa auxiliaris) - COLORADO - Larvae 0-7 per corn plant in fields southeast of La Salle, Weld County. Chemical control and reseeding necessary. (Rothman). UTAH - Light on rangeland in Cache County. (Knowlton). NORTH DAKOTA - Larvae destroyed 15 acres of 30-acre field of sugar beets in Pembina County. (Lundquist, Frye). MINNESOTA - Damaged flax field near Lake Park, Becker County. (Minn. Pest Rpt.).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Populations in oats decreasing, migrating into vegetable crops. Counts ranged 200-300 per 100 sweeps of oats although occasional fields with 500 per 100 sweeps. (Wis. Ins. Sur.). MICHIGAN - Averaged 2-3 per lettuce plant in some Ingham County fields. Some aster-yellows infected plants apparent. (Bath, Cress).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Counts 0-3 per 10 square feet in Montrose and Delta Counties. Most sugar beets entering 8 to 10-leaf stage. (Bulla).

CORN EARWORM (Heliothis zea) - TEXAS - Damaging grain sorghum in large areas of central and north-central areas. (Turney, Green). OKLAHOMA - Infested 100 percent of corn ears in Tipton area, Tillman County. Moderate in corn in Marshall County, light in tassels of corn in Mayes County. Averaged 1 per 25 terminals in peanuts in Garvin County. (Okla. Coop. Sur.). KANSAS - Larvae reported infesting 50 percent of whorls of sweet corn in Sedgwick County week ending June 18. Currently in same field, larvae averaged 2 per plant in silks or whorls and eggs averaged 3 per ear on silks. (Bell). ILLINOIS - Feeding in corn whorls about to tassel in western part of State. (Sur. Bull.). TENNESSEE - Immatures feeding in whorls of corn in some fields in central and west areas. Below control levels. (Gordon). ALABAMA - Scattered infestations on 5-20 percent of 5-foot-high corn in Chilton County. Damage reported in many fields in Cullman County. Larvae light but widespread in ears of corn in Baldwin County. (Futral et al.).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Infestations increased in older grain sorghum throughout panhandle area. Economic damage not anticipated in any fields observed. Light in grain sorghum in Brazos, Robertson, and Burleson Counties. Light to moderate in Pecos, Reeves, and El Paso Counties. (Green et al.). KANSAS - Mostly none, but occasionally very light populations, noted in sorghum in west-central and northwest districts. None to very light in sorghum in Geary and Shawnee Counties, but one field of 14-inch-high sorghum in Shawnee County had 600+ per plant; lady beetles, lacewing larvae, and other predators very abundant in this field. (Bell). MISSOURI - Light to moderate feeding in whorls of grain sorghum throughout southern areas. (Munson). NEBRASKA - Light in grain sorghum; ranged 1-15 nymphs per plant on 3-4 percent of plants examined in Gage, Lancaster, Jefferson, Thayer, Nuckolls, Webster, Franklin, Harlan, Furnas, and Red Willow Counties. (Staples, Cornelius).

GREENBUG (*Schizaphis graminum*) - ARIZONA - Ranged 5-25 per sorghum plant in Willcox area of Cochise County. (Ariz. Coop. Sur.). TEXAS - Moderate to heavy on grain sorghum in Brazos, Robertson, and Burleson Counties. Ranged 0-1 colony per plant; each colony averaged 25-30 aphids. Moderate to heavy in Hill, McLennan, Falls, and Coryell Counties. (Green, Hoelscher). Tremendous increase in activity noted in north-central areas. Heavy in several fields east of Corsicana, Navarro County. Heavy in some fields in Ellis County, treatment required. Light in Denton, Collin, Grayson, Hunt, and Delta Counties. (Turney). On South Plains, greenbug infestations in grain sorghum remained light and scattered. In many fields in area infestations declined during past 14 days. (Rummel). OKLAHOMA - Light to moderate on sorghum in Craig, Ottawa, and Payne Counties. (Okla. Coop. Sur.). ARKANSAS - Single colony found in 4 counties surveyed in southwest area. Found in Hempstead County for a new county record. (Boyer). KANSAS - Mostly light to moderate on 3 to 8-inch sorghum in west-central and northwest crop districts. Beating rains apparently lowered populations in some areas. Heavy populations of *Hippodamia convergens* (convergent lady beetle), sometimes eggs and larvae, found in few fields and may provide adequate control in some cases. (Bell). NEBRASKA - Light in Lancaster, Gage, Webster, Thayer, Nuckolls, and Franklin Counties; averaged 10 percent of plants infested; parasitism by *Lysiphlebus testaceipes* (a braconid) increasing. Greenbug threatening in Furnas, Harlan, and Red Willow Counties; 75-90 percent of plants infested with 1-2 stem mothers and 5-35 aphids per plant. Occasional fields in Red Willow County with up to 60 aphids per plant. (Staples, Cornelius). Infestations in grain sorghum in Lincoln County appear stable or declined slightly. Many plants examined had up to 3 colonies of 4-5 aphids per plant. (Campbell).

POTATO LEAFHOPPER (*Empoasca fabae*) - COLORADO - Ranged 20-25 per 100 sweeps of potatoes in La Salle area of Weld County. (Urano). WISCONSIN - Nymphs more noticeable in regrowth alfalfa than prior weeks; ranged 3-5 per sweep near Wisconsin River. Adults numerous at lights in northern Dane County June 21 and generally 1-2 per 10 sweeps. (Wis. Ins. Sur.).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - None found on potatoes in Goshen and Laramie Counties. Averaged 5 per 100 sweeps on *Lycium* sp. at Torrington, Goshen County. (Parshall).

HORNWORMS (*Manduca* spp.) - GEORGIA - Eggs moderate to heavy on tobacco in Tift and Appling Counties. (Girardeau, French, June 19). SOUTH CAROLINA - *M. sexta* (tobacco hornworm) light on tobacco in Clarendon, Horry, Sumter, and Marlboro Counties. (Benton).

TOBACCO BUDWORM (*Heliothis virescens*) - SOUTH CAROLINA - Continues a major problem on tobacco in all counties. (Benton).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEBRASKA - Light trap collections indicate moth flights declining in Saunders and Dixon Counties. Egg deposition heavy; first-generation larvae in most field and sweet corn. Percent plants infested in 3 districts surveyed (5 fields per county) averaged: Northeast 76.1, east 65.9, southeast 19. Egg masses per 5 plants by district averaged: Northeast 8.5, east 0.48, southeast 0.6. Most early corn in northeast and east districts will require treatment. Fall (1970) survey showed these districts had heaviest overwintering populations. Moth activity should continue throughout State next 7-10 days. Fresh egg masses common on corn in these 3 districts; averaged 1.7 per plant in northeast. Most larvae in first and second stages. Some controls underway, but may be premature. (Keith, Berogan). Larvae infested 10-29 percent of corn plants in 4 early fields in Hall County. (Hill, Wedderburn). SOUTH DAKOTA - Severe damage to untreated corn expected next few weeks in southeast area. First instars infested 100 percent of whorls of corn over 30 inches high in Yankton County by June 24. Moths numerous. Larvae very heavy; up to 30 in some whorls, 10-15 per whorl common in most fields, with 100 percent of whorls showing shothole damage. (Kantack). MINNESOTA - Moth emergence and egg laying increased.

Ostrinia nubilalis pupation nearly complete in southern half of State. Egg laying found most often in taller corn. Egg masses per 100 plants averaged by district as follows: Southwest 22.5, southeast 6.6, west-central 16, central 5.5. Heaviest counts observed in Redwood and Renville Counties, ranged 144-300 borers per 100 plants, but only in few widely separated fields. Expect egg masses and borers to increase next 14 days. (Minn. Pest Rpt.). IOWA - Moth flights peaked in southern third of State. Infestation 100 percent in western areas, borers 10-30 per plant in some fields. Controls applied. (Iowa Ins. Sur.). MISSOURI - Pupation and second-brood emergence occurring throughout extreme southeast area. (Munson). ILLINOIS - Threat of first generation about past; only few unhatched eggs found, mostly in northern section. Check of 100+ most advanced fields showed 15 percent of plants infested; ranged 0-55 in individual fields. In most areas, 50-80 percent of corn acreage attractive to moths and suitable for good larval survival. (Sur. Bull.). INDIANA - Percent shothole feeding in corn checked by districts: Northwest 0-5 (average 2.3), north-central 0-36 (average 8.7), northeast 0-23 (average 6). Generally first or second instars; occasional midrib feeding observed. Oviposition probably incomplete as adults in many fields. Egg masses more common in northeast district than elsewhere. Only corn suitable for oviposition was examined. (Meyer). OHIO - Moth collections in blacklight traps increased slightly over last reporting period. (Blair).

WISCONSIN - O. nubilalis moth flights still heavy. First and second instars in scattered fields in southern counties and as far north as Jackson County. Eggs dominant, 4-8 masses per 50 plants in some fields. Potential high for serious infestations on earliest sweet corn. (Wis. Ins. Sur.). MICHIGAN - First-brood moth emergence peaked June 12-14 in Lenawee County; smaller peak occurred June 19-20. Larvae feeding on corn, also found on snap beans, peppers, and potatoes. Larval activity should have peaked by June 22-24. First brood appeared heavier than average for past 5 years. (Sauer). DELAWARE - Adults averaged 3 per night in Sussex County in blacklight traps. Larvae averaged 260 per 100 plants in early planted, untreated sweet corn in one area of county. (Burburis, Lesiewicz). MARYLAND - Damage levels increasing rapidly on Eastern Shore. Heaviest damage ranged 20-40 percent in about 10 percent of acreage in Dorchester, Wicomico, Worcester, and Somerset Counties. Most fields on Eastern Shore east of Cecil County averaged less than 10 percent damage with first through third instars present. Corn in Montgomery, Frederick, Washington, Carroll, Harford, and Baltimore Counties ranged less than 5 percent damage with first instars present. Egg laying continues Statewide. (U. Md., Ent. Dept.). KENTUCKY - Larvae infested 5 percent of corn in Fayette County field. (Barnett). ALABAMA - Late instars heavy in 50-75 percent of cornstalks in 25-acre field of pretassel to tasseling corn in Chilton County. Pupation occurred June 19. Moth flights for second generation should be occurring in central and northern areas. (Barnett et al.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MISSOURI - Pupation of first generation underway in southeast area. No emergence noted. (Munson).

STALK BORER (Papaipema nebris) - MARYLAND - Third instars continue to infest no-till corn in Frederick, Howard, Carroll, and Montgomery Counties. (U. Md., Ent. Dept.). OHIO - Damaging field corn in Madison County. (Blair).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MISSOURI - Larval infestations caused severe lodging of corn in Barton County. All stages present. (Fairchild).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Populations reported from late plantings of grain sorghum in Goliad County. Generally light in central areas from Brazos, Robertson, and Burleson Counties. One heavy, but localized, infestation detected in isolated field of grain sorghum near Hearne, Robertson County. (Cole et al.). ARKANSAS - Light in 5 of 13 sorghum fields in bloom in Hempstead, Lafayette, Little River, and Miller Counties. Heaviest counts 3-4 per head in one field in which 10 percent of heads blooming. Few fields in east-central area with 1-2 per head. (Boyer).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - PENNSYLVANIA - About 30 percent infestation on wheat stems in Lancaster County. (Tetrault).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEVADA - Damaging larval populations in alfalfa seed fields at Orovada, Humboldt County. Subsequent adverse weather conditions, introduction and emergence of pollenators complicated control measures. (Nev. Coop. Rpt.). IDAHO - Populations nearing pupation, damage more severe than in 1970 in Twin Falls County. (Sutherland, Youtz). Larvae severe in numerous untreated alfalfa hayfields at Ada (June 23) and Canyon (June 24) Counties. (Peterson et al.). UTAH - Larvae developed more rapidly since weather became warmer. Stubble spray applied in many areas to protect second crop. (Knowlton). Damage to first crop lighter than normal in Duchesne and Uintah Counties. (Mathis). WYOMING - Larvae ranged 28-69 per sweep in 2 alfalfa fields in Powell area, Park County, June 18. (Burkhardt). Currently, larvae ranged 35-500 per 10 sweeps of alfalfa in Laramie, Goshen, Niobrara, Converse, and Platte Counties. Heavy damage in Platte and Converse Counties. About 75 percent of first cutting mowed. (Parshall). NEBRASKA - Averaged 1.2 adults and 46.3 larvae per 100 sweeps in 24 Dawson County fields. (Manglitz, Stevens). SOUTH DAKOTA - Larvae very heavy in Lawrence and western Meade County alfalfa around northern Black Hills. In untreated fields larval populations of 5,000 per 100 sweeps common. Adults 175-225 per 100 sweeps. Most larvae second and third instar. First cutting of alfalfa well underway; regrowth in harvested fields could be held back, particularly in untreated fields. (Jones). NORTH DAKOTA - Larval counts in dryland alfalfa in Oliver County averaged 40 per 100 sweeps. Alfalfa in full bloom. Larvae 1 per 100 sweeps in alfalfa north of Bismarck, Burleigh County. This is a new county record. (Brandvik). WISCONSIN - New adults averaged 50 per sweep in uncut alfalfa in western Dane County field. Larval counts 1-2 per 10 sweeps in uncut dense stands in Sheboygan, Manitowoc, and Calumet Counties. Counts about same in regrowth alfalfa in Grant, Rock, Iowa, Green, and Dane Counties. (Wis. Ins. Sur.). INDIANA - Much of alfalfa in northern districts recently harvested. Larvae ranged up to 3 per sweep in few fields available in northeast district. (Meyer).

OHIO - H. postica oviposition ceased. Larval populations still heavy for time of year in certain fields. Larvae per sweep by county: Washington less than 1, Wayne 5. New adults found throughout State. (Flessel). NEW YORK - Populations near or at peak in most areas. Graying noted in many fields. Pupation underway in some areas. (N.Y. Wkly. Rpt., June 21). MASSACHUSETTS - Count per 100 sweeps: Adults 8, larvae 896 in Berkshire County alfalfa. (Miller).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WYOMING - Adults and nymphs ranged 1-6 per 10 sweeps in 5 alfalfa fields in Goshen, Converse, and Platte Counties. (Parshall). NORTH DAKOTA - Adults and nymphs of this species and Lygus lineolaris (tarnished plant bug) heavy and damaging flower buds on alfalfa in Oliver and Burleigh Counties. Ranged 250-1,000 (averaged 600) per 100 sweeps. Alfalfa will be cut for hay. (Brandvik).

MEADOW SPITTLEBUG (Philaenus spumarius) - IDAHO - Adults in alfalfa at Meridian, Ada County, and mint at New Plymouth, Payette County. This is a new record for Ada County. (Peterson et al.).

PEA APHID (Acyrthosiphon pisum) - WYOMING - Averaged 2-3 per sweep in 2 alfalfa fields in Powell area, Park County. Counts low. (Burkhardt). Ranged 6-160 per 10 sweeps in alfalfa of Laramie, Goshen, Niobrara, Converse, and Platte Counties. (Parshall). UTAH - Moderate in Iron County alfalfa. (Knowlton).

LEAFMINER FLIES - NEW YORK - Undetermined species caused heavy damage to alfalfa in southeastern area, centered around Dutchess County. Leafminer flies continue more important than alfalfa weevil in these areas. (N.Y. Wkly. Rpt., June 21).

SOYBEANS

BEET ARMYWORM (*Spodoptera exigua*) - ALABAMA - Larvae extremely heavy and damage serious to large field of soybeans 12-14 inches tall at Foley in Baldwin County. Present control effort unsuccessful and further controls will be necessary. (Payne et al.).

SEEDCORN MAGGOT (*Hylemya platura*) - MINNESOTA - Damage to soybeans and seedling corn reported from Jackson and Lac qui Parle Counties. Only scattered fields injured. Most damage on soybeans; cotyledons damaged. (Minn. Pest Rpt.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - INDIANA - Ovipostion underway in southeast district. (Broersma). MARYLAND - Adults defoliated 80 acres of beans in Reids Grove area of Dorchester County. First and second instars in Dorchester, Wicomico, Somerset, and Worcester Counties. Generally heavy and scattered throughout these counties. (U. Md., Ent. Dept.).

THRIPS - MARYLAND - Damage levels increased. About 300 acres in Talbot, Dorchester, Wicomico, and Caroline Counties heavily infested, thrips 30-60 per plant. (U. Md., Ent. Dept.).

PEANUTS

TOBACCO THRIPS (*Frankliniella fusca*) - ALABAMA - This species and other thrips continue to cause widespread damage and controls applied to much acreage in Pike, Barbour, and Dale Counties. (Carter et al.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Infestations heavy enough to merit first controls in some areas of Richland County; 10 percent infestation in 1 of 10 fields checked. (Bailey). In Florence County, 30 weevils on 2 wing traps; total to date 1,012. Weevils on 12 live traps 45; total to date 1,564. Total number of weevils emerged greater than 1970. (Taft et al.). GEORGIA - Adults averaged 8 per grandlure trap during week of June 6-12 in Randolph County; ranged 0-392 (average 86) per acre in 17 southern fields. (Womack). ALABAMA - Overwintered weevils heavy in south and central areas. Eggs laid in squares. First pupae of season reported in early cotton in Macon County; adult emergence expected June 29. Infestation 1-8 percent in many early fields not yet fully fruited in northern counties. Adults lighter north of Birmingham than anticipated although much more plentiful than in 1970. (McQueen). MISSISSIPPI - In delta counties, weevils in 2 of 19 fields. Weevil and punctured squares in 2 of 11 fields. In pheremone-baited wing traps recovered 3 weevils in Washington County and 28 in Bolivar County. (Pfrimmer et al.). LOUISIANA - In Madison Parish, collected 24 weevils from 20 nonsticky traps and 38 from 4 sticky traps. Recovered 59 from 10 wing traps adjacent to ground trash collection sites. Collected 19 from 129 wing traps on island in Mississippi River. Total of 16 in 65 wing traps near experimental plots. Weevils in 4 of 25 fields checked by row foot method; counts per acre 26 in 3 fields and 65 in one. (Cleveland et al.). ARKANSAS - Overwintered weevils 5-7 per 100 terminals in east-central area. Surveys indicate possible buildup of first-generation weevils in Lafayette County. (Boyer). Total of 264 fields infested in areas surveyed. (Barnes, Jones). TEXAS - In McLennan and Falls Counties, punctured squares averaged 0.3 (maximum 3.6) percent in 36 treated fields. Averaged 2.6 (maximum 13.5) percent in 9 untreated fields. Total of 22 weevils trapped on pheromone-baited wing traps; total for season 2,169. Traps removed June 23. (Cowan et al.). For Boll Weevil in High Plains area see page 479.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Moths in Florence County light traps: *H. zea* 11 and *H. virescens* 1. Infestations light. (Taft et al.). GEORGIA - Egg laying still light; no appreciable larval damage noted in southern areas. (Womack, June 19). ALABAMA - Larvae light in fields throughout State although moth flights and egg laying increased. Predators and parasites plentiful, holding larvae below economic levels. (McQueen). MISSISSIPPI - In delta counties, eggs in 8 and larvae in 5 of 30 fields. Maximum per 100 terminals, 1.5 eggs and 1 larva. Injured squares averaged 2.23 percent in 8 of 11 fields. (Pfrimmer et al.). LOUISIANA - In Madison Parish, Heliothis spp. eggs ranged 26-156 per acre in 6 of 14 fields. (Cleveland et al.). ARKANSAS - In areas surveyed 640 fields infested. No problems in any area. (Boyer et al.). Moths on sugarlines (standardized at 0.5 mile of row for each crop) totaled 217 on corn, sorghum, and soybeans in Lonoke County. (Boyer). TEXAS - In McLennan and Falls Counties, eggs averaged 1.8 and larvae 0.4 per 100 terminals in 43 treated fields. Eggs averaged 0.8 and larvae 0.6 in 10 untreated fields. Injured squares averaged 1.6 (maximum 12.5) percent in 36 treated fields and averaged 1.6 (maximum 3.5) percent in 9 untreated fields. Of 36 larvae collected from cotton 23 identified H. virescens. (Cowan et al.). ARIZONA - One H. zea larvae and 11 eggs reported from 432 fields in Graham County June 14-21. (Ariz. Coop. Sur.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - KENTUCKY - Caused light damage to tobacco in Boone County. (Barnett).

SUGAR BEETS

BEET WEBWORM (Loxostege sticticalis) - NORTH DAKOTA - Moths in most fields in Oliver, Burleigh, Walsh, Pembina, and Grand Forks Counties. In Oliver County, larvae completely defoliated 38-acre field, partially damaged additional 18 acres. Moths ranged up to 5 per square yard in Burleigh and Oliver Counties. Egg masses up to 4 per leaf. (Brandvik et al.). WYOMING - Moth counts decreased in Powell area, Park County, by June 18. (Burkhardt). Moths light in sugar beet fields of Goshen and Platte Counties, few small larvae present. (Parshall).

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Eggs in 7 fields checked in Powell area, Park County, June 18; 30-100 percent of plants had eggs around bases. Larvae found in several fields. Adult activity decreased. (Burkhardt). NORTH DAKOTA - Adults in all fields surveyed in Grand Forks County. Early eggs nonviable and drying up in Walsh and Pembina Counties. No hatch occurred in these counties. (Kaatz). MINNESOTA - Survey underway in Red River Valley. In Clay County, some adults in most fields in lighter soil areas from south of Moorhead north to county line; ranged trace to 1.4 per square foot. At Robbin in Kittson County, infestation appears to cover oval area 4 miles long by 3 miles wide. Heavier soils elsewhere in Kittson County had none or an occasional adult. (Minn. Pest Rpt.).

SPINACH LEAF MINER (Pegomyia hyoscyami) - WYOMING - Percent of plants with eggs ranged 40-100 at Powell, Park County, June 18. (Burkhardt). Larvae infested 0-30 percent of leaves per plant in Platte and Goshen Counties. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Remains light to moderate in Reeves County. Moderate in El Paso County. (Neeb).

HOP APHID (Phorodon humuli) - WASHINGTON - General buildup of nymphs and adults in hop yards near Grandview, Yakima County. (Cone).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Eggs and some larvae on potatoes in Lincoln area of Penobscot County. Infesting several fields of table stock potatoes at Showhegan, Somerset County; 1 adult and 20 larvae per 20 plants. (Gall). COLORADO - Larvae ranged 80-85 per 100 sweeps in potatoes in La Salle area of Weld County. (Urano).

POTATO FLEA BEETLE (Epitrix cucumeris) - MAINE - Population light on potatoes in Aroostook and Penobscot Counties. Counts averaged 40 per 20 plants in Showhegan area of Somerset County. (Gall). MINNESOTA - Caused heavy injury to some potato fields in western Marshall County. (Minn. Pest Rpt.).

Aphids on Potatoes in Maine - Examination of 1,200 plants in untreated plots revealed: Aphis nasturtii (buckthorn aphid) on 18 plants (1.5 percent), 14 alatae and 39 apterae; Myzus persicae (green peach aphid) on one plant (0.08 percent), 1 alate and 2 apterae (one infestation); Macrosiphum euphorbiae (potato aphid) on 45 plants (3.75 percent), 23 alatae and 134 apterae. Three M. euphorbia parasitized, probably before leaving rose. In Lincoln area of Penobscot County, alate migrants of M. persicae, M. euphorbia, and A. nasturtii taken in yellow pan traps. None found in Corinth area. (Gall).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Adults and larvae required controls in 400 acres of snap beans near Vienna, Dorchester County, and Salisbury, Wicomico County. (U. Md., Ent. Dept.). WYOMING - Adults 0-5 per 100 feet of row in Goshen, Platte, and Laramie Counties. Egg masses present in most fields. (Parshall). UTAH - Reported from Murray, Salt Lake County. (Knowlton).

GARDEN SYMPHYLAN (Scutigerella immaculata) - IDAHO - Caused up to 80 percent reduction on 10 acres of beans at Kimberly, Twin Falls County. (Sutherland).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - PENNSYLVANIA - Adults averaged 2 per plant on commercial and garden cucumber plantings in Lackawanna and Centre County. (Gesell). KENTUCKY - Adults caused moderate damage to squash in Fayette County. (Barnett).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Averaged 25 per plant on commercial watermelons in southern Jefferson County. Moderate in Bryan and Cleveland Counties. (Okla. Coop. Sur.).

MELON APHID (Aphis gossypii) - OKLAHOMA - Averaged 250 per plant on commercial watermelons in Jefferson County. (Okla. Coop. Sur.).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Found on asparagus brush in Somerset County; nymphs with wing pads observed. (Ins.-Dis., Newsltr.).

SPOTTED ASPARAGUS BEETLE (Criocerus duodecimpunctata) - MAINE - Few adults still present on asparagus in Orono area, Penobscot County. Egg and larval counts moderate. (Gall).

DECIDUOUS FRUITS AND NUTS

ORIENTAL FRUIT MOTH (Grapholitha molesta) - WASHINGTON - First second-brood shoot strikes noted. Few mature first brood on unsprayed peach tree near Sawyer, Yakima County. (Johnson, Marey). COLORADO - Moth flights increasing in Palisade and Vineland districts of Mesa County, peaked June 18. Ranged 0-47 per trap in these districts; averaged 18 per trap in most infested areas. Parasite releases to be concentrated in problem zones. Counts 1-22 in 5 bait and attractant traps at Orchard Mesa Station in Mesa County. Trap catches in Palisade and Vineland areas much heavier than in Orchard Mesa and Clifton districts. (Sisson et al.). OHIO - First-generation larvae damaging peach terminals in Portage County June 23. (Miller).

CODLING MOTH (Laspeyresia pomonella) - OREGON - First adults taken from bait traps June 22 at Corvallis, Benton County. (Capizzi). COLORADO - Attractant traps showing increase in past 5 days in Mesa County area. (Bulla).

OBLIQUEBANDED LEAFROLLER (Choristoneura rosaseana) - OREGON - Adults taken in blacklight traps located in prune and cherry orchards in Milton-Freewater area, Umatilla County. (Burkhart). New adults common at lights in West Salem, Polk County, end of last period. (Westcott).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - General infestations of Anjou and Bartlett pears in Yakima County. Second-generation egg hatch. (Gregorich).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - NEVADA - Heavy infestations on scattered apple and pear trees at Lovelock, Pershing County, with limb kill evident. (Haas). OREGON - Crawlers observed beginning of period June 21-25 in Medford area, Jackson County. (Berry).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Flies in Van Buren County emergence cages since June 22. Single fly trapped near Grand Rapids on same date. Emergence should be well underway throughout southwest area next 7 days. Required sprays should be applied by July 1. (Sauer).

BLACK CHERRY FRUIT FLY (Rhagoletis fausta) - MICHIGAN - Individuals taken on sticky-can traps June 9 in Ingham and Jackson Counties, June 24 in Oceana County. (Sauer).

CHERRY FRUIT FLY (Rhagoletis cingulata) - MICHIGAN - Emergence traps indicate heavy activity throughout southern counties. First flies reported in Hart and Shelby area June 20; controls should be applied no later than June 30. (Sauer, McLean). Adults emerged in cages June 22 in Van Buren County, June 23 in Kent County. (Coon). WASHINGTON - First adult captured in ammonium carbonate traps on June 20, 30 days later than normal at Zillah, Yakima County. (Hudson).

WESTERN CHERRY FRUIT FLY (Rhagoletis indifferens) - OREGON - Adults noted on sweet cherry June 20 in Milton-Freewater area, Umatilla County. (Burkhart).

EUROPEAN RED MITE (Panonoychus ulmi) - MASSACHUSETTS - Counts of 5.5 per 100 apple leaves in Hampshire County orchard. (Blyth). MICHIGAN - Building up; eggs appearing in some instances. (Sauer).

AN ERIOPHID MITE (Aculus comatus Keifer) - OREGON - Collected June 1, 1971, damaging leaves of Davidiana variety filberts at Corvallis, Benton County. This is a new North American record. Collection and identification by G.W. Krantz. (Krantz).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Egg laying for second generation underway in south-central areas. Few eggs in Bastrop and Gonzales Counties. Light infestations at Eagle Pass, Maverick County. (Cole, Mathies). OKLAHOMA - Nut entries ranged 40-60 percent in unsprayed pecan orchards in Payne County, 13-50 percent in Rogers County. Larvae about half grown. Heavy in unsprayed pecans in Stephen County; light in Marshall County. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Heavy in young pecan trees in southern Jefferson County. (Okla. Coop. Sur.). TEXAS - Continue to be troublesome throughout south-central, central, and north-central areas. (Cole, Green).

ITALIAN PEAR SCALE (Epidiaspis leperii) - CALIFORNIA - Infesting walnut trees in 170-acre planting at Gridley, Butte County, at rate of 200 per twig. (Cal. Coop. Rpt.).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - UTAH - More damaging this season in Washington County than for 15 years. (Knowlton).

GRAPE BERRY MOTH (Paralobesia viteana) - MISSOURI - Abundant in unsprayed vineyards in south-central and southeast areas; few in some commercial vineyards. (Craig).

MEADOW SPITTLEBUG (Philaenus spumarius) - MONTANA - Infested strawberries at Missoula, Missoula County. (Pratt).

ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Second instars active throughout State. Heavy on junipers and deciduous plants. (U. Md., Ent. Dept.). TENNESSEE - Caused severe damage to planting of white pines for Christmas trees in Hamblen County. Trees 4-5 feet tall with top 2 feet of each tree dead. Immatures feeding on needles, bark, and woody portion of trees. (Hammett). Damaging white pines and junipers in Franklin County. (Cagle). Heavy on cedars in Fayette County. (Locke).

HOLLYHOCK WEEVIL (Apion longirostre) - KANSAS - Adults found on hollyhock in nurseries in Wabaunsee, Cloud, and Saline Counties. These are new county records. Determinations by K.O. Bell and W. Iselin. (Bell). MISSOURI - Adults collected at Eldorado Springs, Cedar County, June 18, 1971, by J.E. Francka. This is a new county record. (Munson).

FOREST AND SHADE TREES

SPRUCE SPIDER MITE (Oligonychus ununguis) - MARYLAND - Caused heavy damage to ornamental hemlock and spruce throughout State. (U. Md., Ent. Dept.).

SPRUCE BUDWORM (Choristoneura fumiferana) - MAINE - Pupating in southeast area. Survey shows pest over much of spruce and fir area of State from Calais, Cooper, and Robbinston to Baxter Park and Upton. No larvae yet collected from southwest coastal area. (Dearborn). PENNSYLVANIA - Heavy on hemlock, many trees completely defoliated in Centre County; heavy in Elk and Cameron Counties. (Eckess). MICHIGAN - Larval feeding completed in Upper Peninsula, damage evident; pupating. Damage very heavy again this year in Michigamme area of Marquette County. Aerial survey of infested area to be made. (Keith).

JACK PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Severe defoliation occurred in portions of six townships in Douglas and Bayfield Counties. Infestation covers 20,000-30,000 acres. (Wis. Ins. Sur.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Heavy on seeding pines in nursery in Cloud County. (Bell). MISSOURI - Collected in Dunklin, Mississippi, Scott, and Stoddard Counties by R. Thompson. These are new county records. (Munson).

PINE TUSSOCK MOTH (Dasychira plagiata) - MINNESOTA - Heavy defoliation on 1,000 acres in east-central area. Most in fifth instar, with smaller percentages in fourth and sixth instars. (Minn. Pest Rpt.).

AN OLETHREUTID MOTH (Epinotia nanana) - MAINE - Large numbers of moths in flight in coastal spruce areas. (Dearborn).

CONIFER SAWFLIES (Neodiprion spp.) - TENNESSEE - N. pratti pratti larvae began hatching in eastern Highland Rim and in eastern areas during week of April 15. N. taedae linearis larvae began about week earlier in western portion of State. Changes in distribution and severity of damage caused by these insects compared with previous years yet unknown; however, N. pratti pratti larvae observed for first time in Sequatchie, Van Buren, Bledsoe, and Cumberland Counties in early May. (Tenn. For. Serv.).

SPRUCE BUD SCALE (Physokermes piceae) - OREGON - Remains numerous in Lithia Park, Ashland County, site of first reported occurrence in State. (Larson). Virtually 100 percent of scales in small sample collected from Colorado blue spruce June 16 infested with larvae of Holcencyrtus physokermis (an encyrtid wasp). (Westcott).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - CALIFORNIA - Heavy on pine trees on Forest Genetics Station at Placerville, El Dorado County. (Cal. Coop. Rpt.).

PINE LEAF CHERMID (Pineus pinifoliae) - MAINE - Eggs hatching on white pine needles; nymphs settling on 1971 shoots. (Dearborn).

A NOTODONTID MOTH (Symmerista canicosta) - MICHIGAN - Adult activity and egg laying underway in Manistee National Forest area. Eggs all over trees; numbers about equal on white and red oaks. Egg parasitism very low. (Eiber). Heavy adult activity at blacklight trap locations indicates egg laying still underway. No hatch noted in any area, but eggs observed in Croton Dam area of Newaygo County indicate hatch will start June 26 to July 2. Inspection of infested areas in Mason, Newaygo, and Oceana Counties indicate egg masses viable; larval populations will be troublesome. (Wallner).

FRUITTREE LEAFROLLER (Archips argyrospilus) - PENNSYLVANIA - Peak moth emergence observed; damage unusually severe on ornamentals and shade trees in central areas. (Gesell).

LARGE ASPEN TORTRIX (Choristoneura conflictana) - MINNESOTA - Heavy moth emergence observed in St. Louis, Lake, and Cook Counties. Defoliation of aspen covers many square miles in these counties. (Minn. Pest Rpt.).

MAN AND ANIMALS

HORN FLY (Haematobia irritans) - VERMONT - Increasing in Champlain Valley. (Nielsen, June 22). WISCONSIN - Annoyance to cattle heavy in Calumet and St. Croix Counties, light to moderate in most other areas. (Wis. Ins. Sur.) IOWA - Ranged 10-400 (averaged 66.5) per side on untreated beef herd in Story County. (Iowa Ins. Sur.). SOUTH DAKOTA - Ranged 300-400 per side on cows, heavier on bulls, on untreated cattle in Dewey, Corson, Campbell, and McPherson Counties. (Jones). WYOMING - Ranged 30-40 per cow along Laramie River in Albany County. (Lloyd). Ranged 10-300 per head on 4 cattle herds in Goshen, Niobrara, and Platte Counties. (Parshall). NEBRASKA - Heavy on 6 herds checked in Frontier and Lincoln Counties, ranged up to 550 per animal. (Campbell, McEvoy). OKLAHOMA - Averaged 500 per head on untreated cattle in Marshall County. Reported heavy in Garvin and moderate in Cleveland and Craig Counties. (Okla. Coop. Sur.). TEXAS - Increasing after scattered rains in south-central area. Medium to heavy and widespread in Hays and Jackson Counties. (Green). FLORIDA - Averaged 147 per dairy cow near Gainesville, Alachua County. (Head).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Severe annoyance to cattle reported in Sauk, Adams, and Calumet Counties. Slight to moderate annoyance in Chippewa, St. Croix, Columbia, Rock, Polk, Outagamie, and Oconto Counties. Spraying underway in most counties. (Wis. Ins. Sur.). NEBRASKA - Increasing, averaged 4-5 per leg on animals in feedlots in Lincoln County. (Campbell, McEvoy).

BLACK FLIES (*Simulium* spp.) - MAINE - Peak numbers attained in most sections. Populations will decline in most areas next 14 days. (McDaniel). NEBRASKA - Troublesome on herds pastured on flood plain areas along Platte River in Lincoln and Keith Counties. (Campbell, McEvoy).

TABANID FLIES - VERMONT - *Chrysops* spp. increased on cattle in Champlain Valley. (Nielsen, June 22). NEBRASKA - *Chrysops* spp. troublesome on herds pastured on flood plain areas along Platte River in Lincoln and Keith Counties. (Campbell, McEvoy). UTAH - Horseflies and deer flies troublesome in Duchesne, Uintah, and Daggett County meadow areas (Mathis), and in Honeyville and Fielding area of Box Elder County, annoying horses and cattle (Knowlton).

MOSQUITOES - MAINE - Peak numbers attained in most sections. Populations will decline in most areas next 14 days. (McDaniel). WISCONSIN - Biting continues heavy in some lowland localities. *Aedes cinereus* dominant biter in Wisconsin River bottomlands in western Dane County. *A. vexans* has not appeared yet. (Wis. Ins. Sur.) OHIO - Biting by *Aedes* spp. and *Culex* spp. heavy in some areas of Washington County. (Field). MINNESOTA - Of 133 larval collections during week ending June 19 *A. vexans* found in 48 percent of samples. *A. vexans* heavily dominant with 6-7 species of spring woodland pool mosquitoes very prominent in all collections. Latter species very long lived and will continue to bite in wooded areas into August. Total of 31,700 female mosquitoes collected in 16 light traps during week ending June 18. Of these, 92.5 percent *A. vexans*. Light trap catches declined significantly by June 24. Moderate rains in Minneapolis and Saint Paul area on June 19 and 20 produced small brood of *A. vexans*. Survivors of this brood may cause modest local increase in mosquito populations during week of June 28. (Minn. Pest Rpt.). WYOMING - Very heavy and annoying man and animals along Laramie River, Albany County. Counts ranged 400-600 per cow. (Spackman, Lloyd). CALIFORNIA - Mosquito problem more acute past week due to hot weather. Residents at Sacramento, Sacramento County, complained of high annoyance in yards and at swimming pools. Complaints that bites are more serious than other years quite general. Mosquito abatement districts being pressured to continue control because of population levels and lack of effective material due to resistance. (Cal. Coop. Rpt.).

SCREWWORM (*Cochliomyia hominivorax*) - Total of 5 cases reported in U.S. June 20-26 as follows: TEXAS - Jeff Davis, Jim Hogg, Bowie, Jim Wells, Mason. Total of 67 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 10, Chihuahua 16, Coahuila 5, Nuevo Leon 7, Tamaulipas 29. Total of 43 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 39,358,000; Arizona 3,310,000; Arkansas 400,000; Mexico 111,770,000. (Anim. Health Div.).

HORSE BOT FLY (*Gasterophilus intestinalis*) - INDIANA - Larvae emerged June 14-18; adults currently very abundant. (Chandler).

FACE FLY (*Musca autumnalis*) - VERMONT - Increasing in Champlain Valley. (Nielsen, June 22). WISCONSIN - Moderate to severe in Calumet, Chippewa, and Columbia Counties. (Wis. Ins. Sur.) ILLINOIS - Increased rapidly past 2 weeks; now annoying pastural cattle. State average 25 per animal, with individual herds averaging up to 60 per head. Populations on increase again since summer of 1969; summer 1970 could be worst yet. (Sur. Bull.). IOWA - Ranged 1-30 (averaged 11.2) per face on untreated beef herd in Story County. (Iowa Ins. Sur.). SOUTH DAKOTA - Very low numbers in Dewey County; in several herds examined, less than one per 10 head. This is a new county record. Expect pest had been in county for several years. (Jones). NEBRASKA - Increasing in canyon pastures in Lincoln County, averaged 2-3 per animal. (Campbell, McEvoy). MISSOURI - Counts of 3-25 per head observed in central area. (Peters). Heavy egg laying also reported from this area. (Wingo).

HOUSE FLY (*Musca domestica*) - WISCONSIN - Populations increasing steadily and reports of problems received from all areas. Numerous in and around homes as well as near cattle barns. Moderate to severe near barns on many farms visited. Populations on farms variable due to sanitation and spraying practices. (Wis. Ins. Sur.). TENNESSEE - Heavy in several locations in State. Control difficult in many cases. (Gordon).

HORSE BITING LOUSE (*Bovicola equi*) - IDAHO - Collected from horse at St. Anthony, Fremont County, May *11, 1971*. Determined by J.E. Keirans. (Peebles, Sutherland).

EAR TICK (*Otobius megnini*) - WYOMING - Averaged 5 per head on 40 cows near Torrington, Goshen County. (Lloyd).

BENEFICIAL INSECTS

ALFALFA LEAFCUTTER BEE (*Megachile rotundata*) - IDAHO - First adults emerging from boards wintered outdoors at Jerome, Jerome County. (Priest). TEXAS - Incorporated into Boscoe area of Ward County as alfalfa seed crop pollinators. Results satisfactory. (Neeb).

A BRACONID (*Microctonus aethiops*) - NEW YORK - Surveys reveal this parasite of adult *Hypera postica* (alfalfa weevil) widespread in Tompkins County. (N.Y. Wkly Rpt., June 19).

AN ICHNEUMON (*Bathyplectes curculionis*) - NEW YORK - Parasitism by this species more widespread and percent parasitism higher than in 1970. (N.Y. Wkly. Rpt., June 19). KENTUCKY - Parasitized 1 of 92 *Hypera postica* (alfalfa weevil) larvae in Garrard County, none of 90 in Warren County, 2 of 65 in Lincoln County, and none of 87 in Fayette County. (Barnett).

LADY BEETLES - WASHINGTON - *Stethorus picipes* feeding on McDaniel spider mites and eggs on Delicious apple trees near West Wapato, Yakima County. (Gregorich). WYOMING - Lady beetle adults ranged 0-10 per 10 sweeps of alfalfa in Laramie, Goshen, Niobrara, Converse, and Platte Counties. Few larvae found. (Parshall). ILLINOIS - More numerous in corn fields than for several years. Egg laying observed. (Sur. Bull.). KANSAS - *Hippodamia convergens* adults (up to 40 per plant) feeding at nectaries on green pods of yucca in Rawlins County; also found feeding at nectaries at bases of flowers of thistle in Logan and Sherman Counties. (Bell).

KLAMATHWEED BEETLES (*Chrysolina* spp.) - IDAHO - Released 3,000 *C. gemellata* adults in Weatherby Landing Strip area, Elmore County, June 22. Weed had invaded experimental bitterbrush planting in area. (Portman). WASHINGTON - *Chrysolina* spp. on 0.25 acre of Klamathweed near Washougal, Clark County. (Chase, Shanks).

PREDACEOUS MITES - IDAHO - *Metaseiulus occidentalis* (a phytoseiid mite) controlling spider mite feeding damage to about 1,000 acres of mint at New Plymouth, Payette County. (Homan, Portman). KANSAS - Several predaceous spider mites found feeding on greenbugs in a field of sorghum in Shawnee County; 1 per 2,000 aphids. (Bell).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Catches on wing traps increased below Caprock. Few adults found in early planted cotton in Kent County. Weevils have not been detected above Caprock. (Rummel et al.). For Boll Weevil in other areas see page 471.

CEREAL LEAF BEETLE (Oulema melanopus) - Specimens collected on oats as follows: VIRGINIA - Franklin County by W.B. Mason June 15. ILLINOIS - Henry County by J.E. Pennington June 14, Crawford County by M.D. McCoy June 7, Scott County by G.R. Aldridge June 14, Jersey County June 16 and Pike County June 17 by T.S. Smith. Determinations by R.E. White. These are new county records. (PPD). PENNSYLVANIA - Most oatfields infested but light in Indiana County (Keim, Pealer); some fields treated in Lawrence, Mercer, Butler, and Beaver Counties (Eckess). MICHIGAN - Small numbers appearing in Charlevoix County (Rebmon); damaging scattered fields in Alpena County (Nickels); heavy in scattered fields of small grain in Bay County (Woods). OHIO - Noted in corn 18-24 inches tall. Many growers in Ross County experiencing adult feeding damage on corn; in some cases 10-15 per plant. Approximately 5 percent of leaf area eaten. Adults moving from ripening wheat to corn and infested outer borders of fields. (Muntzing). NEBRASKA - None found in 129 oatfields checked in eastern third of State June 1-15. (Walstrom).

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Heavy on fruitless mulberry tree at Strathmore, Tulare County. Area about halfway between Porterville and Lindsay; this constitutes new location for this pest. Delimiting survey negative to date. (Cal. Coop. Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - PENNSYLVANIA - First adults in blacklight trap collections at Scranton, Lackawanna County and at Pittston, Luzerne County. (Eckess).

GRASS BUGS - IDAHO - Labops sp. feeding yellowed crested wheatgrass on Sawtooth National Forest east of Featherville, Elmore County, June 18. (Edwards). UTAH - Irbisia pacifica 1-2 per 10 sweeps on planted grasses in Green Canyon, Cache County. Larger grass bugs more numerous but spotty. (Knowlton). SOUTH DAKOTA - Populations of Labops sp. apparently decreased; few observed near Union Center, Meade County, where counts had been 34 per square yard 7 days earlier. Destroyed 15 acres of wheat. (Zimmerman).

GRASSHOPPERS - NEVADA - Nymphs of Oedaleonotus enigma, Aulocara elliotti, and Melanoplus sanguinipes ranged 100-125 per square yard on 3,000 acres of rangeland grass between Upper Clover Ranch and Midas, Elko County. O. enigma dominant. (PPD). Unspecified nymphs moving into alfalfa from band 3 miles long in Kings River Valley, Humboldt County. (Day). TEXAS - Grasshoppers increasing in grain sorghum fields throughout many north-central areas. (Turney). OKLAHOMA - Ranged 10-25 per square yard through eastern Stephens and Jefferson Counties, most of Love County, western Carter and Murray Counties, and southern Garvin County. Counts up to 100 per square yard present in Bermuda grass pastures and crop margins. Populations include Melanoplus spp., Hesperottettix spp., Ageneotettix deorum, and Boopedon sp. Rangeland counts in Johnston County ranged 5-15 per square yard. Other generally infested areas (8 or more per square yard) include Cimarron County north of Cimarron River, northern Beaver County, and western parts of Harper, Ellis, and Roger Mills Counties. Scattered infestations in rangeland, Bermuda grass, or crop margins reported from Pontotoc, Marshall, Coal, Atoka, Lincoln, Pottawatomie, Kingfisher, Cleveland, Kiowa, and Comanche Counties. One specimen of Dactylotum bicolor pictum collected in southwestern Garvin County. This is a new county record and farther east than normal for this species. (Okla. Coop. Sur.). NEBRASKA - Melanoplus spp. averaged 45-60 per square yard in 3 bromegrass pastures in Lancaster County and on Sarpy County pasture. (Walstrom, June 20). SOUTH DAKOTA - M. femurrubrum populations in roadsides, mostly first instars, noneconomic in Corson County. In eastern part of county, M. differentialis and M. bivittatus averaged 20 per square yard 11 miles east of McLaughlin; nymphs up to fourth instar. (Zimmerman). NORTH DAKOTA - Nymphs in roadside hatching sites ranged up to 40 per square yard in Burleigh and Emmons Counties. Highest counts in lighter soil areas in southern Burleigh County. Nymphs up to 20 per square yard in some fields. Development ranges first through fourth instar. *M. bivittatus*, *M. sanguinipes*, *M. differentialis* and *M. packardii* dominant species in heavier infested areas. (Brandvik). MINNESOTA - *M. femurrubrum* eggs continue to hatch, so far only scattered infestations reported. Margin counts in oatfields ranging up to 8 per square yard in McLeod and Renville Counties. Hatch occurred in roadside ditches and movement into fields just starting. (Minn. Pest Rpt.).

GYPSY MOTH (*Porthetria dispar*) - VERMONT - Defoliating ornamental crab apple, fruit trees, grey birch, willow, white oaks, poplar, and some sugar maple. (Nielsen, June 22). CONNECTICUT - Larvae completely stripped trees in some areas; many hillsides appear brown. About 99 percent of inquiries concerned this species. (Savos). PENNSYLVANIA - First pupation observed in Monroe County. Several thousand acres of defoliation observed in Pike, Monroe, and northern Berks Counties. (Eckess). Expected to be worst year of record for this species in State. (PPD). NEW JERSEY - Defoliation apparent in Monmouth and Ocean Counties, also in north-central areas during period June 18-24. Pupation underway in these areas. NEW YORK - Larvae defoliated trees in Ulster, Sullivan, and Orange Counties. (PPD).

JAPANESE BEETLE (*Popillia japonica*) - ALABAMA - First adult of season collected in trap at Irondale, Jefferson County, in previously infested area. (Green). SOUTH CAROLINA - On elderberry in Pickens County. (Jackson). TENNESSEE - First adults of season trapped in Hamby Valley, Monroe County, June 15. Using 48 traps for 3-day period (June 15-17) collected 40,000 adults. (Stafford). Adults observed June 21 in Carter County. (Miller et al.). KENTUCKY - Adults caused moderate damage to corn in Bell County. (Barnett).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - TENNESSEE - Stunting of plants observed in several soybean fields in west areas. (Gordon).

WESTERN GRAPELEAF SKELETONIZER (*Harrisina brillians*) - CALIFORNIA - Larvae found on single property in Clovis, Fresno County, in area where pest originally found in 1970. All previously infested blocks treated. Survey negative in rest of quarantine area. Moth emergence underway in core area of known infestation at Klamath River, Siskiyou County; first and second instars now present. Treatment underway on wild grapes in known infested area. Due to late season, control delayed. Infestation recorded and delimited late in 1970; did not receive full treatment schedule. (Cal. Coop. Rpt.).

TULIPTREE SCALE (*Toumeyella liriodendri*) - CALIFORNIA - Infested tuliptree detected June 10, 1971, in San Leandro, Alameda County, by G.H. Brady and K. Meehan. Determined by R.F. Wilkey. Delimiting survey shows infested trees over 20-block area of city. Scale eradicated from San Jose, Santa Clara County, in 1969. Infestation in San Leandro only currently known infestation in State. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

New Western Hemisphere Record - Two specimens of a PIOPHILID FLY (Protopiophila australis (Harrison)) collected on bones on beach at Kahana Bay, Oahu, in April 1971 by J. Tenorio. Previously known only from Australia and Fiji. Determined by George Steyskal. (Hardy).

New State Record - A CHAMAEMYIID FLY (Leucopis ocellaris (Malloch)), a predator of scale insects and mealybugs, collected preying on Dysmicoccus neobrevipes (a mealybug) infesting fruit of Fiji fan palm (Pritchardia pacifica) in Honolulu, Oahu, in April 1960, and preying on Nipaecoccus vastator (a mealybug) infesting native cotton (Gossypium tomentosum) at Koko Head, Oahu, in September 1960 by J.W. Beardsley. Distribution of L. ocellaris includes Alberta and Manitoba, Canada. Determined by J.F. McAlpine. (Hardy). This is also a new United States record. (PPD).

General Vegetables - SPOTTED GARDEN SLUG (Limax maximus) light to moderate in 8 acres of head cabbage at Kula, Maui. Damaged mature heads, especially along borders. (Hori). POTATO TUBERWORM (Phthorimaea operculella) larvae 8-9 per leaf in 0.25 acre of eggplant at Pearl City, Oahu. (Kitagawa, Yamamoto). COWPEA APHID (Aphis craccivora) heavy on long beans at Ewa and Kawailoa, Oahu. In Ewa, 80 percent of plants infested in 3 acres. Several Coelophora inaequalis (common Austrialian lady beetle) observed. In Kawailoa, aphids heavy on beans and stems in backyard planting. (Au, Rose).

Ornamentals - LITCHI FRUIT MOTH (Cryptophlebia ombrodelta) larvae heavy on 3 rainbow shower trees (Cassia javanica x. fistula) at Kaneohe, Oahu; 90 percent of shoots infested and apparently dying. (Funasaki).

DETECTION

New Western Hemisphere Record - A PIOPHILID FLY (Protopiophila australis (Harrison)) HAWAII - Oahu Island. (p. 481).

New North American Record - AN ERIOPHYID MITE (Aculus comatus Keifer) OREGON - Benton County. (p. 474).

New United States Record - A CHAMAEMYIID FLY (Leucopis ocellaris (Malloch)) HAWAII - Oahu Island. (p. 481).

New County Records - ALFALFA WEEVIL (Hypera postica) NORTH DAKOTA - Bureigh (p. 470). CEREAL LEAF BEETLE (Oulema melanopus) VIRGINIA - Franklin; ILLINOIS - Henry, Crawford, Scott, Jersey, Pike (p. 479). FACE FLY (Musca autumnalis) SOUTH DAKOTA - Dewey (p. 478). A GRASSHOPPER (Dactylotum bicolor pictum) OKLAHOMA - Garvin (p. 479). GREENBUG (Schizaphis graminum) ARKANSAS - Hempstead (p. 468). HOLLYHOCK WEEVIL (Apion longirostre) KANSAS - Wabaunsee, Cloud, Saline; MISSOURI - Cedar (p. 475). MEADOW SPITTLEBUG (Philaenus spumarius) IDAHO - Ada (p. 470). NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) MISSOURI - Dunklin, Mississippi, Scott, Stoddard (p. 476).

CORRECTIONS

CEIR 21(26):458 - GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Delete first sentence. Should read: "Feeding heavy in Berks, Monroe, and Pike Counties; most larvae third and fourth instars; defoliation heavy. In Somerset County, 180 acres of woodland treated. (Eckess)." Remainder of statement unchanged. (PPD).

LIGHT TRAP COLLECTIONS

	Tempera-ture	Precip-itation	Type of trap	Agrotis ipsilon (black cutworm)	[illegible]	[illegible]	[illegible]	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm, tomato fruitworm)	[illegible]	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellow-striped armyworm)	Trichoplusia ni (cabbage looper)
FLORIDA																							
Gainesville 6/18-24			BL					22		9						8			2	6	1	3	
KANSAS (County)																							
Barton 6/17-23			BL	1		125	48								1		4	21	48			1	3
Brown 6/21			BL	4			10										12	2	2				
KENTUCKY																							
Bowling Green 6/22			BL																18				
MINNESOTA																							
Shakopee 6/13-19			BL																8				
Worthington 6/13-19			BL																4				
MISSISSIPPI																							
Stoneville 6/18-24	70-96	0.54	BL	4	3			1	2	78						1		23	181			63	
MISSOURI (County)																							
Greene 6/18-24			BL	9						6							2	48	355			14	
Pemiscot 6/18-24			BL	9						13							3	101	183		26	26	
NEW JERSEY																							
Evesboro 6/16-22			BL	6													53	6	15				
Seabrook 6/16-22			BL	2													38	1	100			1	
NORTH DAKOTA																							
Bismarck 6/18, 21			BL											159				4	7				
Fargo 6/19, 20			BL											6				499	32				
SOUTH DAKOTA																							
Brookings 6/14-20			BL	19													38	52	117				
TENNESSEE																							
Dyer 6/21-25			BL	7	1												3	57	65			27	
Madison 6/21-25			BL	6						1							8	144	270			27	1
TEXAS																							
Waco 6/17-24			BL	39				104	7	140								4	10	37	6	37	80
VIRGINIA																							
Holland 6/12-22			BL												6	1			73			1	
Warsaw 6/16-22			BL												9	1			3			1	
WISCONSIN																							
Lancaster 6/17-21			BL	2													27	3	47				
Mazomanie 6/17-21			BL														101		23				

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ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Plant Protection Division, ARS, USDA
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Hyattsville, Maryland 20782

Volume 21 July 9, 1971 Number 28

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID heavy on sorghum in Texas and Kansas. GREENBUG damage isolated in Texas. (pp. 484-485).

ALFALFA WEEVIL damaged alfalfa in South Dakota, Utah, Michigan, and Vermont. (p. 489).

REDBACKED CUTWORM damaged mint in Oregon. (p. 491).

Several DEFOLIATORS damaging in Pennsylvania: SPRUCE BUDWORM damaged hemlock on 40-square-mile area; larvae of a TORTRICID MOTH caused severe defoliation throughout one million acres, with extensive tree mortality reported; defoliation by OAK LEAFTIER heavy on oaks; FOREST TENT CATERPILLAR defoliation moderate to heavy on various tree species. CONIFER SAWFLIES troublesome on pine in Florida and Michigan. (pp. 493-494).

SCREWWORM reported for first time since 1961 in Arkansas. FACE FLY increased in California, Utah, and Maryland. HORN FLY annoying cattle in several States. (pp. 495-496).

GRASS BUGS damaged grasses in Washington, Utah, and Nebraska. (p. 497).

Detection

For new county and island records see page 500.

Special Reports

Distribution of Sweetclover Weevil. Map. (p. 502).

Reports in this issue are for week ending July 2 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JUNE 4

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Weather last week was typical of late June and early July. Some flood-producing thundershowers occurred in the central Great Plains. The Far Southwest was hot and dry, the Southeast hot and humid early in the week but cooled somewhat in latter half.

PRECIPITATION: Typical summer thunderstorms brought most of the rains last week. On Monday, a cold front extended from Wisconsin to Nebraska. Heavy thunderstorms occurred near, in advance of, and behind the front. A 5-inch rain fell at Pipestone, Minnesota, Monday night and 6 inches fell at Jasper, Minnesota. Four to 6.25 inches of rain caused extensive flooding in Asherton and Cotulla vicinities in Texas, and Gonzales, Texas, about 60 miles east of San Antonio, received about 8 inches of rain. More heavy thunder showers occurred Tuesday night in Nebraska and Iowa. Hastings, Nebraska, received 3.25 inches and 3.36 inches fell at Ft. Dodge, Iowa, in the 24-hour period ending at 7 a.m. Wednesday. By Wednesday, the cold front extended from the Great Lakes to Texas. Showers and thunderstorms occurred along the front. No precipitation or only widely scattered light sprinkles fell in southern California, Arizona, and New Mexico. A few severe thunderstorms occurred in the East. Early Thursday afternoon, a thunderstorm in Roanoke, Virginia, vicinity was accompanied by winds gusting to 84 m.p.h.. Later in the afternoon, winds associated with a thunderstorm in the Lancaster, Pennsylvania, vicinity approaching 60 m.p.h. overturned and damaged aircraft. Most of the thunderstorms, however, were not severe but brought needed rainshowers. Flood-producing thundershowers fell in parts of north-central Kansas over the weekend. A station near Harlan, Kansas, received 6.75 inches Saturday. Heavy showers fell in Kansas and other nearby States in the central Great Plains. Generous weekend rains also fell in the Southeast. Some weekend totals in Georgia and South Carolina approached or exceeded 3 inches. No rain or only widely scattered light sprinkles fell in California, Arizona, and nearby portions of neighboring States. Drought continued in western Texas.

TEMPERATURE: Hot, humid weather prevailed early in the week from the central Great Plains to Pennsylvania and southward to the Gulf of Mexico. Bay City, Michigan, registered 103°, Columbus, Ohio, 104° Monday afternoon. The showers and thunderstorms brought slight relief to some vicinities. Cooler weather

For continuation of weather of the week and for 30-day forecast see page 500.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - KENTUCKY - Larvae defoliated 3 percent of rice plants in Wayne County; controls 95 percent effective. Larvae averaged one per stalk of sorghum in Carlisle County. (Barnett). OHIO - Additional reports of damage from Belmont, Champaign, and Harrison Counties. Most in last instar and residing in whorls during day and moving to leaf tips during night. Newly emerged moths appearing in blacklight traps June 25-28. (Blair et al.). MICHIGAN - Collected 94 moths at Lenawee County station; 29 taken night of June 26, but noneconomic for area. Damage in corn very light, none observed in small grains in Gladwin County. (Eiber). WISCONSIN - Scattered, light infestations reported on corn in Green, Sheboygan, and Walworth Counties. (Wis. Ins. Sur.). COLORADO - Moths light in light traps in Weld County. (Urano, Hantsbarger).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Numerous on sweet corn planting in western Dane County June 30; averaged 6 per 10 sweeps of carrots in southeastern Jefferson County. Increase probably due to ripening and heading out of grain; dispersal into lettuce, onion, potato, and carrot increased. (Wis. Ins. Sur.).

CORN EARWORM (Heliothis zea) - MARYLAND - Adult activity increasing on Eastern Shore. Blacklight trap counts for week ending June 29 averaged 4 per night in Queen Annes and Dorchester Counties. (U. Md., Ent. Dept.). NORTH CAROLINA - Second-generation eggs abundant on cornsilks in Bertie, Johnston, and Columbus Counties. (Hunt). KANSAS - Second and third instars infesting 15 percent of whorls of 50-inch corn in Riley County. (Bell). OKLAHOMA - Heavy in corn tassels in Cotton and Lincoln Counties and light to moderate in Cleveland County. Ranged 1-3 per ear in Payne County. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - WISCONSIN - Small colonies evident on few tassels of early sweet corn in western Dane County. Most colonies contained less than 5 individuals; only single aphids detected on many plants. (Wis. Ins. Sur.). MISSOURI - Light (1-6 percent of plants with colonies) in 8 of 21 fields in northeast area. (Munson). KANSAS - Occasionally heavy in sorghum in northeast and east-central districts. Caused much reddening and some necrosis on 40 percent of terminal leaves in one field in Nemaha County. Ranged by county (number of fields per county in parentheses): Nemaha, 20-1,500+ (2); Washington, 100 (1); Shawnee 25-800 (3); and Osage, 1,200 (1). (Bell). TEXAS - Infestations in grain sorghum heavy in some areas of High Plains. Browning of leaf tips observed in Crosby County. Moisture adequate and no economic damage observed. Moderate to heavy in Knox County. (Rummel, Boring).

GREENBUG (Schizaphis graminum) - WASHINGTON - Present on wheat in Klickitat, Benton, Franklin, Adams, and parts of Yakima, Walla Walla, Whitman, and Lincoln Counties; populations declining rapidly due to maturation of grain, parasites, and predators, particularly syrphids and lacewings. Minor damage in few spring wheatfields. Greenbugs appearing on giant wild rye, fescue, quackgrass and other grasses. (Klostermeyer). COLORADO - Appearing in whorls of sorghum in Lamar area, Prowers County. Ranged 15-25 per plant on 6 to 8-inch high sorghum. Heavy rain past 7 days reduced numbers. (Hantsbarger, Hogan). NEW MEXICO - Light and spotty in fields of corn and sorghum at Hatch, Dona Ana County. (Riddle). TEXAS - Light to heavy with isolated damage in Robertson, Milam, and Falls Counties. Greenbugs reported from Hays County with some spraying. In north-central areas infestations remained fairly static. Beneficial insects increasing and keeping greenbug populations static. Greenbug light to heavy in Navarro, Ellis, Kaufman, Johnson, Collin, Hunt, and Fannin Counties. Light in Reeves, Pecos, Glasscock, and Martin Counties. Heavy rains apparently reduced populations in Coyanosa area of Pecos County. Remained light and scattered throughout South Plains. Some fields in Lubbock and Bailey Counties have sufficient greenbugs to produce visible honeydew. (Cole et al.). KANSAS - Counts per sorghum plant by county (number of fields per county in parentheses): Nemaha 4-20 (20); Brown 5-20 (2); Washington

5 (1); Shawnee 2-200 (3); and Osage 5 (1). (Bell). NEBRASKA - Small colonies developing on milo in Adams County. No visible damage in fields examined. (Roselle, Berogan). Increasing in Lancaster and Gage Counties; caused no visible damage; up to 50 percent of plants infested with 1-200 per plant. Most still in whorls and not moved to lower leaf surfaces. (Staples, Cornelius). SOUTH DAKOTA - Trace, less than 1 per 10 feet of row, near Tyndall, Bon Homme County, and less than 5 per 10 feet of row near Wagner, Charles Mix County. Sorghum 12 inches high in fields examined. (Fransen).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Populations erratic in regrowth alfalfa; counts per sweep ranged 1-2 in southwest to 8-10 in sandy soiled areas. Populations expected to increase generally as remaining alfalfa cut. (Wis. Ins. Sur.). MICHIGAN - Adults abundant around lights at night in East Lansing. Very few nymphs seen in alfalfa, but alfalfa and bean growers should be alert. (Sauer). KENTUCKY - Adults averaged 300 per 100 sweeps in red clover in Warren County. (Barnett).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Ranged 0-1 per 100 sweeps in 2 untreated fields near La Grange; averaged 4 per 100 sweeps on Lycium sp. at Torrington, Goshen County. Few nymphs present. None found in potato fields in Laramie County. (Parshall).

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - First-generation larvae damaged 3-5 percent of tobacco plants in 10 fields in Person area of Granville County. Second-generation eggs appearing. (Hunt). MARYLAND - Adults laying eggs in St. Marys, Calvert, and Charles Counties. Infestations averaged less than 1 percent in these counties. (U. Md., Ent. Dept.).

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - First-generation third and fourth-stage larvae (1 per 100 plants) appearing on tobacco in northern counties. Based on 50 plants in 16 fields, damage ranged 2-10 percent. (Hunt). KENTUCKY - Light infestation reported from western areas. (Barnett). MARYLAND - Adults laying eggs in Charles, Anne Arundel, St. Marys, and Prince Georges Counties. No larval damage yet. (U. Md., Ent. Dept.).

TOMATO HORNWORM (Manduca quinquemaculata) - OKLAHOMA - Damage moderate to home garden tomatoes in eastern Payne County. Occasional M. sexta (tobacco hornworm) on tomatoes at Perkins, Payne County. (Okla. Coop. Sur.). TENNESSEE - Observed M. quinquemaculata in all tobacco fields surveyed in central and eastern areas, light to date; controls should be applied. (Pless).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Spot checks in 10 fields of corn in Granville area, Person County, indicate infestation 2-50 percent. Infestation 10 percent in most fields; appears restricted to 4-foot corn. (Hunt). TENNESSEE - First to third instars observed in whorls and tunneling stalks in corn throughout central and eastern areas. (Pless). KENTUCKY - First and second instars infested 60-75 percent of corn in Todd, Union, and Crittenden Counties, 15 percent in Warren County; one location in Warren County had 50 percent infestation with 2-3 borers per plant. (Barnett). MARYLAND - Infestations ranged 5-60 percent in earliest planted corn in Wicomico, Worcester, Dorchester, and Talbot Counties. Heaviest infestations west of Chesapeake Bay ranged 10-40 percent in early corn. Pupation of first-generation borers noted in Somerset and Worcester Counties. (U. Md., Ent. Dept.). ILLINOIS - Percent plants showing whorl feeding by district: Northwest 16.8, northeast 5.9, west 20.7, east 2.8, east-southeast 20.7, southeast 13. Average number of larvae per plant by district: Northwest 1, northeast 0.4, west 0.3, east 0.7, east-southeast 1.7, southeast 1.4. (Ill. Ins. Sur.). WISCONSIN - Larval feeding variable. Most damage on early sweet corn in tassel stage; 50 percent of plants infested with up to 4 larvae per plant in some fields. Infestation averaged 20 percent in early field corn; 8 percent or less in later field and sweet corn. Most Ostrinia nubilalis larvae first instar, many second instars present. Few fifth-stage larvae detected in extreme southern Rock County. Blacklight trap catches indicate peak moth flight occurred June 23-26 except in extreme eastern and northeastern counties. Current warm temperatures favorable for moth activity but collections declined indicating significant flights ended. (Wis. Ins. Sur.). MINNESOTA - Infestations variable but enough heavily infested fields found to signal possible serious problem. Economic level reached when 50-75 percent of plants infested. Heavy in scattered fields throughout southwest district. Number of borers per 100 plants averaged 87 for district. Counts ranged up to 634 per 100 plants in some fields. Surveys in south-central district showed similar situation. Borers per 100 plants average 106 for district. Light in east-central district, borers per 100 plants averaged 56. Only egg masses found in west-central district. Moth emergence probably peaked. Limited checks in southwest and central districts showed over 90 percent emerged. Moths light in blacklight traps but numerous in fields. Egg laying not as high as expected. Heavy rains and wind during nights may account for light egg laying. (Minn. Pest Rpt.). SOUTH DAKOTA - Surveys on June 27 indicated adult emergence and egg laying in cornfields as far north as Flandreau, central Moody County, and egg hatch common as far north as Dell Rapids, northern Minnehaha County. Economic damage continued in southeastern counties. Percent infestation 100 in Clay, Union, and Yankton Counties on taller corn, and from 80 in northern Minnehaha County to 50 in Moody County. To date, several thousand acres treated in southeastern counties, primarily with granules. (Kantack, Jones). Eggs and first instars in northern Moody County and southern Brookings County. (Jones). Larvae 3-15 per plant in 40 acres of grain sorghum 24 to 30-inches tall near Yankton, Yankton County. (Miller).

IOWA - Surveys of tallest corn for O. nubilalis in 6 southwest counties; leaf feeding in top 3 leaves considered infested. Percent infestation averaged 49.6 (ranged 12-96); borers per 100 plants averaged 211.6 (ranged 24-700). At one location in Pottawatomie County, 70-inch corn showed 60 percent infestation. Infestation averaged 48.75 percent in field in Webster County. Larvae had not bored into stalks by July 1 in southwest area. (Iowa Ins. Sur.). NEBRASKA - Controls still underway in east, northeast, and southeast districts. In some cases, controls being applied too late, as many borers boring into stalks. Averaged 30-40 phone calls per day for past 14 days. Few scattered reports of infestations in grain sorghum. (Keith). In Adams County, averaged 38 percent infested; corn 40 to 50-inches tall. (Berogan, Roselle). MISSOURI - Ranged 16-100 percent of corn plants infested with 2-5 borers per plant in 21 northeast area fields. Mostly third and fourth instars. Pupae observed in early planted fields. (Munson). KANSAS - Up to 80 percent of corn plants in early planted fields infested with second and third instars in Republic and Brown Counties. From 5-15 percent of larvae bored into stalks. Most larvae boring into mid-veins of leaves near collars. Percent of plants infested ranged by county (fields per county in parentheses): Douglass 6-18 (3); Brown 15-80 (4); Nemaha 25-30 (2); Republic 50-80 (4). (Bell). COLORADO - Adults less than 1 per night in blacklight traps in Sussex County. First pupa of first brood observed on June 30 in sweet corn at Bridgeville. (Burbutis, Lesiewicz).

BLACK CUTWORM (Agrotis ipsilon) - COLORADO - Adults appearing in small numbers in light traps in Weld County. (Urano, Hantsbarger). ARKANSAS - Damaged few sorghum fields in Randolph County. (Boyer). MARYLAND - Second to forth instars damaged 30 percent of 28-acre stand of corn near Kennedyville, Kent County. Controls applied. (U. Md., Ent. Dept.).

CORN ROOTWORMS (Diabrotica spp.) - NEW JERSEY - Very few larvae of D. longicornis (northern corn rootworm) found feeding on corn roots in experimental plots at Bloomsbury, Hunterdon County. (Ins.-Dis. Newsltr.). MINNESOTA - Diabrotica spp. egg hatch not reported in southern half of State. Larvae heavy only in Wright County in one field west of Delano and another east of Buffalo. Former had 15-20 larvae per plant, latter 8 per plant. Sixty percent in first instar, 35 percent in second and 5 percent in third. (Minn. Pest Rpt.). IOWA - Percent development of

Diabrotica virgifera (western corn rootworm) 50 in second and 50 in third instars in Pottawattomie County. (Iowa Ins. Sur.). NEBRASKA - Last instars of Diabrotica spp. feeding in corn roots at Mead, Saunders County. Pupation underway and adult emergence expected next week. (Munson et al.). Reports of lodged corn from Kearney and York Counties. (Keith). MISSOURI - First adult D. virgifera of season observed in Barton County on June 24. (Keaster).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Activity reported throughout south-central area. Heavy in fields with uneven stands and with plants blooming at different times. Light to heavy in scattered fields in Brazos and Robertson Counties. Infestations noted in Collin, Hunt, and Fannin Counties. Infestations light but expected to increase soon. (Cole et al.). ARKANSAS - Remains light in blooming sorghum in Lafayette County. Numbers below economic level and no treatment needed at this time. (Boyer).

CHINCH BUG (Blissus leucopterus leucopterus) - ARKANSAS - Destroyed 33 percent of 10 acres of sorghum in Clay County. (Boyer). KANSAS - Heavy populations killing young sorghum plants along field borders in Saline County, treating underway; averaged 25 per plant in first 40-50 border rows in some fields. Heavy in sorghum in Marion County. (Bell).

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Heavy in many corn fields in Baldwin County. Yields in more heavily infested fields expected to be reduced by about 20 bushels per acre. Some controls applied. Heavy numbers resulted from heavy carryover of adults through mild winter and large acreage of wheat and clovers for early season buildup. Presents potential threat to soybeans, okra, peas, and pecans in southwest counties. (Turner).

A LEAF BEETLE (Colaspis flavida) - TENNESSEE - Moderate and damaged corn in Madison County. Some stalks dying. Unusual in that field planted in corn in 1970 and damage usually occurs in fields planted in row crops following lespedeza. (White).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Light to moderate in grain sorghum in Pecos, Reeves, Martin, and Glasscock Counties. (Neeb).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Light on Johnson grass around margins of grain sorghum, forage sorghum, and cornfields in Reeves and Pecos Counties. Only detected on sorghum and corn. Numbers very low with only 10 percent of bottom 3 leaves with 10-15 eggs per leaf. Light on corn in El Paso County. (Neeb).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WISCONSIN - Populations continue to be very low in all areas sampled; very scarce in Marathon and Clark Counties. Highest populations (about 10 per sweep) noted in Walworth and Kenosha Counties. (Wis. Ins. Sur.).

GRASS THRIPS (Anaphothrips obscurus) - OHIO - Damage light on about 12 acres of oats in Wayne County on June 29. About 1 percent of grain heads showing chlorosis. (Lytle, Rings).

TURF, PASTURES, RANGELAND

A SCARAB (Phyllophaga fimbripes) - COLORADO - Caused considerable damage to rangelands in Bent County. One area of 2,000 acres involved. (Hantsbarger, Kotich).

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Heavy on St. Augustine lawns in Lee and Brazos Counties. (Spivey, Green).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEVADA - Larvae ranged up to 60 per sweep in several alfalfa hay and seed fields in Lovelock area, Pershing County, controls applied. Infestations spotted. (Stitt). Adults and larvae averaged 2-3 per sweep on 500 acres of seed alfalfa at Kings River Valley, Humboldt County. (Peters). UTAH - Damage heavy to first crop alfalfa in Sanpete County. Much control applied. (Judd). Damage moderate in Duchesne County. (Hunsake). NEW MEXICO - Adults 2-5 and larvae 15-22 per 25 sweeps of alfalfa at Bloomfield, San Juan County. Damage light and controls applied. (Heninger, Campbell). WYOMING - Counts 3-20 per 10 sweeps in second cutting alfalfa in Laramie, Goshen,and Platte Counties. Pupation 50-90 percent. (Parshall). SOUTH DAKOTA - Caused economic damage to 80 acres of 320-acre planting of alfalfa south of Draper in Jones County. Alfalfa cut and stacked. Furthest east that heavy infestation known to occur in State. (Jones, Edwards). WISCONSIN - Few second to fourth instars still in alfalfa; averaged 1 per sweep in some second-growth fields in Grand County. (Wis. Ins. Sur.). MICHIGAN - Injury severe in volunteer alfalfa in Gladwin County. Most damage avoided by cutting alfalfa at proper time. (Sauer). VERMONT - Severe in many areas, particularly on second cut alfalfa. Some areas averaged 25 per sweep. (Nielsen, June 29).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - WISCONSIN - Adults emerging, common in alfalfa and clover mixes in Taylor and Clark Counties. Counts ranged up to 5 per 50 sweeps. (Wis. Ins. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae 30 per 100 sweeps of alfalfa in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - First instars 0-3 per 25 sweeps of alfalfa in southern Dona Ana County. (Riddle).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae per 100 sweeps of alfalfa in Yuma County: 10 on Yuma Mesa and 20 in Yuma Valley. (Ariz. Coop. Sur.). TEXAS - Moderate to heavy on alfalfa in Martin County. (Neeb).

LYGUS BUGS (Lygus spp.) - ARIZONA - Count per 100 sweeps of alfalfa in Yuma County: 350 in Gila Valley, 520 in Yuma Valley, 600 on Yuma Mesa. (Ariz. Coop. Sur.). NEW MEXICO - Ranged 25-100 per 25 sweeps at Farmington, San Juan County, and 0-3 per 25 sweeps in Salem, Dona Ana County. (Riddle, Heninger). WYOMING - Adults and nymphs ranged 3-11 per 10 sweeps in second-cutting alfalfa in Laramie, Goshen, and Platte Counties. (Parshall).

GRASSHOPPERS - OHIO - Melanoplus spp. increasing in southern alfalfa fields. (Flessel). KENTUCKY - Grasshopper nymphs and adults averaged 930 per 100 sweeps of mixed clover and vetch and 180 in red clover in Warren County. (Barnett). WISCONSIN - M. sanguinipes adults detected along margins of alfalfa and corn fields in Waushara and Clark Counties. M. bivittatus nymphs in last instar and common in some alfalfa in north-central region. (Wis. Ins. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Nymphs ranged 1-6 and adults 0-2 per sweep in southwest. Adults predominate, averaged about 20 per sweep in western Dane County, ranged 10-30 per sweep in Marathon, Lincoln, Taylor, and Clark Counties. (Wis. Ins. Sur.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA -Counts per 100 sweeps of alfalfa in Yuma County: 50 in Yuma Valley, 60 on Yuma Mesa. (Ariz. Coop. Sur.).

PEA APHID (Acyrthosiphon pisum) - WYOMING - Ranged 10-75 per 10 sweeps in second cutting alfalfa in Laramie, Goshen, and Platte Counties. (Parshall).

PEANUTS

A BURROWING STINK BUG (Pangaeus bilineatus) - TEXAS - Increasing in Frio County. Numerous fields treated. (Cole).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, punctured squares averaged 1.8 (maximum 20.5) percent in 72 treated fields; averaged 5.7 (maximum 14.8) percent in 17 untreated fields. (Cowan et al.). For Boll Weevil in High Plains area see page 497. (PPD). ARKANSAS - Still increasing in extreme southwest areas. (Boyer). Total of 6,105 fields checked; 913 infested, 23 heavy enough for control. (Barnes et al.). MISSISSIPPI - In delta counties, punctured squares in 9 of 14 fields, averaged 1.8 percent. Weevils taken in pheromone baited wing traps: 1 in Washington County and 11 in Bolivar County. (Pfrimmer et al.). Emergence of overwintered weevils appears complete. Percent infestation by counties follows: Monroe 1, Tishomingo 2, Rankin 10, Hinds 2. Cotton with 3-4 squares per plant. (Sartor). ALABAMA - Egg laying and feeding in squares increased in southern and central areas. Punctured square counts ranged 13-50 (average 40) percent. First "hatchout" expected to be very heavy in western part of State. Only overwintered weevils present in north areas; percent of punctured squares unchanged, 0-15 in Talladega and Colbert Counties. However, most fields not fully fruited. Counts light in many other northern counties. Should continue light generally until emergence of first-generation weevils about July 10-15. Weather favorable for survival of larvae and pupae in all areas. (McQueen). GEORGIA - Overwintered weevils per acre on presquaring and early squaring cotton period ending June 26 by county: 200-300 Tift, 10-12 Burke (Canerday); 300 Terrell (1 field). Punctured squares ranged 3-36 percent in 16 southern fields. Ranged 0-16 per grandlure trap during week of June 14-21 in Randolph County. (Womack). Currently light to heavy in southern areas. (French). TENNESSEE - All overwintered weevils out of hibernation. Surveys indicated general infestation in regularly infested portion of cotton-growing area. Square counts not feasible due to scarcity of squares in older cotton. Punctured squares found in all older cotton in southern tier of counties. (Locke).

BOLLWORMS (Heliothis spp.) - ARIZONA - H. zea larvae found in every field at Parker Valley. Situation watched. One field treated at Yuma and larvae found in few terminals and on lower parts of plants in other fields in Yuma County. (Ariz. Coop. Sur.). TEXAS - In McLennan and Falls Counties, eggs averaged 1.5 (maximum 8.2) and larvae 0.6 (maximum 4.5) per 100 terminals in 73 treated fields; in 16 untreated fields, eggs averaged 1.2 (maximum 2.3) and larvae 0.1 (maximum 0.5). Of 238 larvae collected from cotton and identified, 117 H. virescens. (Cowan et al.). ARKANSAS - Moths taken on sugarline (0.5 mile long) by county: Lonoke 137 (H. zea 117, H. virescens 20), Phillips none. (Boyer). Of 6,105 fields surveyed, total of 1,314 infested. (Barnes et al.). TENNESSEE - Few H. zea eggs found in terminal buds. Some small square damage noted but below control levels. (Locke). GEORGIA - Egg laying and damage light in Tift County; eggs 8-10 and larvae 2 per 100 terminals in Burke County (Canerday); egg laying light in southern areas. (Womack). ALABAMA - Egg and larval counts continue low over State. Beneficial insects very effective in keeping population below economic levels. (McQueen). MISSISSIPPI - In delta counties, eggs in 4 of 14 fields; maximum 2.5 per 100 terminals. No larvae in terminals. Injured squares in 13 of 14 fields, averaged 4.8 percent. (Pfrimmer et al.). Egg oviposition light in delta and southern regions. (Sartor).

TOBACCO

BLACK CUTWORM (Agrotis ipsilon) - MARYLAND - Third instars damaged 25 percent of 10-acre stand of newly transplanted tobacco near Huntingtown, Calvert County. Controls applied. (U. Md., Ent. Dept.).

STALK BORER (Papaipema nebris) - KENTUCKY - Spotted infestation on tobacco in Christian County, damage 5-10 percent. (Barnett).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - KENTUCKY - Adults damaged tobacco in Boone County. No problem in Wayne County where heavy population present earlier. (Barnett).

SUGAR BEETS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Egg hatch light (most eggs nonviable, apparently drying up) and maggots feeding on new beets in Pembina, Walsh, Grand Forks, and Traill Counties. Damage light (less than 1 percent) in these counties except for localized spots near Forest River where up to 30 maggots per beet root found. In Cass County near Kindred, stunted and wilted plants with 1-6 maggots per root found in single field; damage evident in 1 percent of plants. In distribution survey in Grand Forks and Traill Counties, adults, eggs, or maggots present in all fields surveyed except 3 fields in southern Traill County. (Kaatz, Brandvik). MINNESOTA - Surveys in Wilkin County, at least in northern half, showed adults trace. In Clay County, no new areas infested. Adults and eggs noted in light soil areas and no egg hatch. No adults noted in heavy soils of Norman and western Polk Counties. (Minn. Pest Rpt.).

SPINACH LEAFMINER (Pegomyia hyoscyami) - WYOMING - Damage about ended in Goshen, Platte, and Laramie Counties. Larval infested leaves ranged 0-40 percent per plant. (Parshall).

BEET WEBWORM (Loxostege sticticallis) - WYOMING - Eggs, larvae, and adults present in sugarbeets in Goshen, Platte, and Laramie Counties. Larvae ranged 0-3 per plant. No damage to date. (Parshall).

MISCELLANEOUS FIELD CROPS

REDBACKED CUTWORM (Euxoa ochrogaster) - OREGON - Larvae destroyed 345 acres of 500-acre mint planting near Culver, Jefferson County. Damage first noted in late May. Many plants cut off twice. Damage to infested acreage enhanced by severe windstorm. Current survey revealed extensive areas, especially those of higher relief within field, still barren. Mint appears to be recovering over most of field. Population mostly pupae with adults just appearing. Controls applied 3 times. Sprays proved ineffective but bait applications effective. (Westcott, Wheeler).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Still major problem on potatoes in northern areas. (Knowlton, Olson). COLORADO - Appearing in Weld County. Larvae up to 20 per plant in one field. (Hantsbarger).

TUBER FLEA BEETLE (Epitrix tuberis) - OREGON - Previous predictions of population buildup in western areas appear to be substantiated on basis of number of reports of damage received. Additional infestations reported; commercial potato planting in Multnomah County, and backyard garden tomato plantings in Philomath area, Benton County. (Crowell, Westcott).

APHIDS - MAINE - Numbers on 1,200 plants in Aroostook County: Aphis nasturtii (buckthorn aphid) 218, Myzus persicae (green peach aphid) 9, Macrosiphum euphorbiae (potato aphid) 449, Acyrthosiphon solani (foxglove aphid) 4. (Kimball). NEW JERSEY - Myzus persicae building up on eggplant, pepper, potato, and tomato throughout State. Continuation of recommended controls advised. Below normal rainfall will tend to magnify situation. (Ins.-Dis. Newsltr.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - MICHIGAN - Occasional moths still taken in phermone traps throughout State. Peak emergence apparently reached June 7 in southern half of State, about 14 days later in northern area. Little evidence of fruit "stings." (Thompson). WISCONSIN - Egg laying begun in Door County. (Wis. Ins. Sur.).

APHIDS - NEW MEXICO - Myzus persicae (green peach aphid) medium to heavy, severely curled foliage of peach trees at Farmington, San Juan County. (Heninger). ALABAMA - Eriosoma lanigerum (woolly apple aphid) heavy on root systems in 9 commercial apple orchards totaling 250+ acres in Tallapoosa, Coosa, Elmore, and Chambers Counties; 80 percent or more trees of standard root stock and East Malling VII root stock affected. Some colonies developing on new sucker shoots. Trees born on more resistant Malling Merton 106 root stock in these orchards had only very light infestations. (Crocker et al.). MAINE - Aphis pomi (apple aphid) infesting new terminal growth of apples; problems expected. (Wave).

PEAR PSYLLA (Psylla pyricola) - OREGON - Reappearing in tops of trees in commerical pear orchards in Medford area, Jackson County. (Berry). UTAH - Damaging pear foliage in orchard at Roy, Weber County. (Davis). MICHIGAN - Most of second-generation population new nymphs throughout southern area. (Sauer).

CHERRY FRUIT FLIES (Rhagoletis spp.) - OREGON - R. indifferens counts indicate peak adult emergence occurred in Salem area, Marion County. First adults (3) emerged June 19, counts continued to increase past 14 days. Highest count (262) found June 30. (Rassmussen). MICHIGAN - R. fausta (black cherry fruit fly) adults emerged in Benzie County June 13; controls recommended to begin on or before June 28; 5-7 days later in northern Grand Traverse area. Fly activity decreased in southern counties due to very dry weather and hard ground. First R. cingulata (cherry fruit fly) adults emerged June 18 in Benzie County. (Sauer). First R. cingulata larvae collected June 24 in Berrien County. Adult taken July 1 on sticky-can trap near infested tree. Larvae recovered from cherry sample collected June 29 in Kent County. (Hanna).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - First adult of season detected June 25 in Outagamie County. (Wis. Ins. Sur.). MICHIGAN - Emergence decreased sharply in southwest area due to dry soil condition. New flush of flies and egg laying expected in areas receiving rain June 30. In Grand Rapids area, 3 flies taken on traps June 26-29. Control should begin on or before July 8. No flies yet trapped in northern orchards. (Sauer).

SPIDER MITES - IOWA - Tetranychus urticae (twospotted spider mite) eggs, nymphs, and adults infesting 2 of 100 leaves examined in well-managed apple orchard in Pottawattamie County July 1. (Iowa Ins. Sur.). MISSOURI - Panonychus ulmi (European red mite) building up in apple orchards in central area; no predaceous mites found. (Craig). SOUTH CAROLINA - T. urticae 2 weeks late in leaving overwintering hosts but heavy infestations now appearing on apples in mountains. (Nettles).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Heavy on pecan trees in Pontotoc County, moderate in Murray and Bryan Counties, and light in Atoka County. (Okla. Coop. Sur.).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Damage by first generation ranged 2-25 percent in Marshall County. (Okla. Coop. Sur.).

PECAN SPITTLEBUG (Clastoptera achatina) - ALABAMA - Nymphs in spittle masses heavy and widespread on pecan throughout Mobile County. One or more on large number of shoots and nut clusters. (Deakle).

ORNAMENTALS

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Continues to cause severe problems at Pendleton, Umatilla County. Ornamental cut-leaf birch about 80-90 percent infested in Montee and Sherwood Heights area; homeowners extremely concerned. (Westcott).

HOLLYHOCK WEEVIL (Apion longirostre) - MISSOURI - Adults collected at Versailles, Morgan County, June 29, 1971, by J.E. Francka. This is a new county record. (Munson). KANSAS - Adults on hollyhock in nurseries in Lyon, Osage, Chase, and Marion Counties. Determinations by K.O. Bell and W. Iselin. These are new county records. (Bell). NEVADA - Adults collected on hollyhock at Austin, Lander County. This is a new county record. (Bechtel, Martinelli).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Heavy in terminals of ponderosa and Scotch pines in nursery in Lyon County, mostly late instars; 30 percent pupation. (Bell).

SPIDER MITES - MARYLAND - Oligonychus ununguis (spruce spider mite) continues to damage and kill spruce and hemlock in Harford, Baltimore, and Prince Georges Counties. (U. Md., Ent. Dept.). NEVADA - Unspecified species heavy on ornamental conifers at Yerington, Lyon County. (Batchelder).

FOREST AND SHADE TREES

SPRUCE BUDWORM (Choristoneura fumiferana) - PENNSYLVANIA - Severely damaging hemlock in parts of Union, Centre, Lycoming, Luzerne, Schuylkill, Monroe, Clearfield, Cameron, and Elk Counties. Worst damage in Driftwood and Sinnemahoning area of Cameron County and on Union and Centre County line near Woodward where 40 square miles or more of hemlock turned brown. Infested white spruce plantation north of Johnsonburg, Elk County. Pest now in pupal and adult stages. First discovered on hemlock in Carbon County in 1969. (Nichols, June 24).

PINE TUSSOCK MOTH (Dasychira plagiata) - MINNESOTA - Mostly in fifth and sixth instars; pupation began about June 28. Caused moderate to heavy defoliation in east-central areas. Approximately 1,000 acres of jack pine sprayed June 29-30. (Minn. Pest Rpt.).

PINE COLASPIS (Colaspis pini) - FLORIDA - Adults found defoliating much acreage of slash pine (Pinus elliottii densa), in northern Glades and southern Highlands Counties June 24. (Chellman, Wilkinson); adults still active in area July 1. (Wilkinson).

YELLOWHEADED SPRUCE SAWFLY (Pikonema alaskensis) - NORTH DAKOTA - Larvae damaged spruce near Walhalla, Pembina County. Up to 100 percent of needles damaged on 10 percent of trees. Larvae ranged up to 7 per growing tip. Some damage also reported in Rolette County. (Brandvik et. al.).

CONIFER SAWFLIES (Neodiprion spp.) - MICHIGAN - In N. pratti banksianae (jack pine sawfly) outbreak area of Schoolcraft County, sapling and pole-size jack pines in open stands completely stripped of old needles. Larvae in third and fourth instars. (Johnson). Also very common in Manistee County. (Eiber). FLORIDA - N. merkeli (slash pine sawfly) fourth and fifth instars completely defoliated 400 acres of 1,500-acre plantation of 6-year-old slash pine in Glades County by June 24; fifth and sixth instars and some prepupae observed at same location July 1, with about 50 percent of larvae apparently infected with a virus. Second instars of N. lecontei (redheaded pine sawfly) moderate in 100 acres of 6 to 8-year-old northern slash pine (Pinus e. elliottii) on plantation in Glades County by June 24. Third and fourth instars taken at same location July 1; virus introduced from Canada for possible control. Larvae moderate in 50 acres of 8-year-old longleaf pine (P. palustris) on plantation in Taylor County June 30.

Third and fourth instars of N. excitans noted infesting 200 acres of 8-year-old loblolly pine plantation (P. taeda) in Taylor County June 30. (Wilkinson).

A NOTODONTID MOTH (Symmerista canicosta) - MICHIGAN - Most eggs still unhatched, but young larvae feeding gregariously on upper and lower leaf surfaces of white and red oaks. Eggs average 1.9 masses per leaf; highest counts 7.5 masses per leaf in Hardy Dam area of Newaygo County. All surveys indicate very heavy population this year; infestation may spread. Currently limited south of line from Manistee to Brethren, across Red Bridge to U.S. Highway 37 to Bristol to U.S. Highway 131 south. (Eiber, Wallner).

ASPEN BLOTCHMINER (Lithocolletis tremuloidiella) - MICHIGAN - Very heavy again this year on aspen in western half of Upper Penninsula; ranged 7-24 mines per leaf. (Sauer).

LINDEN LOOPER (Erannis tiliaria) - NORTH DAKOTA - This pest and cankerworms completely defoliated Siberian elm shelterbelts in Walhalla area of Pembina County. Larvae completed feeding; most have pupated. (Brandvik et. al.).

A TORTRICID MOTH (Archips semiferanus) - PENNSYLVANIA - Larvae, 500 per 30-inch branch sample, infested one million acres in north-central counties; defoliation severe. Complete stripping of foliage observed in southern Elk, northern Clearfield (Quehanna area), Clinton, northern Cameron, southern Potter, western Lycoming, and western Centre Counties. Extensive tree mortality reported fall 1970 on 162,000 acres; continued over winter. Many red oaks on several thousand acres in southern Potter County, as well as white and chestnut oaks, have now been defoliated twice and tree mortality will be evident in late summer. On Pine Creek Plateau in western Lycoming and eastern Clinton Counties, where outbreak originated in 1967, natural controls finally becoming effective (after most of forest destroyed); larvae diseased and Coccinella novemnotata (a lady beetle) very abundant and feeding on larvae. Control program completed on 2,200 acres at Black Moshannon State Park June 1-3; insect mortality generally 99 percent; also equally effective on Croesia semipurpurana (oak leaftier) and A. argyrospilus (fruittree leafroller). (Nichols).

OAK LEAFTIER (Croesia albicomana) - PENNSYLVANIA - Defoliation heavy on pin oak in French Creek State Park, Berks County, and on red, scarlet, and black oaks in Pine Grove Furnace State Park, Cumberland County, where infestation extended northward to Mt. Holly Springs; several other counties also affected. (Nichols, June 24).

FOREST TENT CATERPILLAR (Malacosoma disstria) - PENNSYLVANIA - Defoliation moderate to heavy on sugar maple, red oak group, black cherry, aspen, and other species in parts of Somerset, Bedford, Westmoreland, Blair, Cambria, Indiana, and Clearfield Counties. Outbreak largely subsided in southern Somerset and Bedford Counties where originated in 1968; decline due largely to polyhedral virus; parasitic sarcophagid flies building up in several other areas. New areas north of Somerset County becoming infested with M. disstria; spraying program on 1,700 acres in Prince Gallitzin State Park, Cambria County, prevented heavy defoliation, but control spotty. Larval and foliage development much delayed this year by cold weather. (Nichols). Larvae pupating June 23 in Somerset County. (Cameron). NORTH DAKOTA - Larvae about full grown with some pupation in infested area near Fort Totten, Benson County. Defoliation light but more widespread than last year; 1971 is fourth year of defoliation. Parasites and diseases reduced populations this season. (Brandvik).

OAK LEAF SKELETONIZER (Bucculatrix ainsliella) - RHODE ISLAND - Second and third instars heavy throughout State. Second generation may be very heavy. (Relli, Field).

ELM LEAF BEETLE (Pyrrhalta luteola) - UTAH - Damage moderate in parts of Duchesne and Uintah Counties. (Hunsaker). More evident in Salt Lake County. (Knowlton). NEW MEXICO - Majority of Siberian elms show medium to heavy infestations and extensive damage in all areas of San Juan County. (Heninger). MAINE - Damage primarily moderate in southern, western, and central areas. (Gall).

A PHYLLOXERA (Phylloxera caryaecaulis) - OHIO - Found for first time in Marion, Stark, and Trumbull Counties. (Miller).

MAPLE BLADDERGALL MITE (Vasates quadripedes) - OHIO - Collected for first time in Montgomery and Stark Counties. (Miller).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 4 cases reported in U.S. June 27 - July 3, 1971: TEXAS - Starr, Val Verde, Bowie; ARKANSAS - Miller. This is first case reported in Arkansas since 1961. Total of 107 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 4, Chihuahua 24, Coahuila 9, Nuevo Leon 2, Tamaulipas 68. Total of 35 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 51,178,000; Arkansas 1,390,000; Arizona 3,310,000; Oklahoma 80,000; Mexico 83,634,000. (Anim. Health Div.).

CATTLE GRUBS (Hypoderma spp.) - UTAH - Adult annoyance to cattle severe in Richmond area of Cache County. (Thornley). Cattle running near Collinston, Box Elder County; annoyance general in other counties. (Knowlton).

FACE FLY (Musca autumnalis) - CALIFORNIA - In Indian Valley, Plumas County, and Sierra Valley, Sierra County, increased from 7-15 per face up to 50 per face. In Lake, Mendocino, and Sonoma Counties, populations decreased abruptly during and following warm weather early in June. Currently, populations increasing rapidly. Rain on June 26 may result in heavy populations in early July. Males and females collected from livestock June 1 in Placer County by J. Henderson. Determined by M. Wasbauer. Specimens taken June 2 in Santa Cruz County. These are new county records. (Cal. Coop. Rpt.). UTAH - Annoyance increasing, especially to horses, in Weber and Cache Counties. (Knowlton). SOUTH DAKOTA - Adults 5-8 per eye on horses near Irene, northern Clay County. Averaged 20 per head on untreated cattle in northern Moody County. (Kantack, Balsbaugh). IOWA - Ranged 5-30 (average 14.8) per face on untreated cattle herd in Story County June 30. (Iowa Ins. Sur.). WISCONSIN - Problems moderate in most counties. (Wis. Ins. Sur.). MARYLAND - Adults at annoyance levels in most areas in Baltimore, Howard, Carroll, Frederick, and Montgomery Counties. Heaviest counts ranged 30-40 per head on cattle and horses. Control necessary on all herds in central counties. (U. Md., Ent. Dept.).

MOSQUITOES - UTAH - Very troublesome in many parts of Cache and Rich Counties (Roberts, Knowlton), in upper Skull Valley of Tooele County, southern Curlew Valley of Box Elder County, and Bluff area of San Juan County (Knowlton), and in much of Uintah and Duchesne Counties (Hunsaker). WYOMING - Populations still heavy and annoying along Laramie River, Albany County. (Parshall). MINNESOTA - Larval collections totaled 306 during week ending June 26. Aedes vexans found in 69 percent, Culex tarsalis in 4.2. Light trap catches week ending June 25 declined to 12,395 mosquitoes; A. vexans 79.1 percent and Coquillettidia perturbans 6.6 percent of total. Latter species will peak about July 10-12. Aedes spp. in 26 fifteen-minute evening and 227 five-minute daytime bite collections mainly A. vexans. Heavy rains in Minneapolis and St. Paul area June 28-29 produced general hatch of A. vexans in runoff areas. Effects of this brood will be noted about July 8-10. (Minn. Pest Rpt.). WISCONSIN - Biting severely annoying to cattle and man in several localities. Localized problems reported in Calumet, Columbia, Chippewa, Winnebago, Waushara, Waupaca, and

Vilas Counties. Biting severe at midday in woodlands in Pine Island Wildlife area west of Portage, Columbia County. Collections of females at Pine Island indicated 84 percent of biters Aedes cinereus and 16 percent A. stimulans. (Wis. Ins. Sur.). ARKANSAS - Psorophora confinnis counts increasing in most rice producing areas of State; average about 600 per light trap per night in Lonoke County. (Boyer).

STABLE FLY (Stomoxys calcitrans) - NORTH DAKOTA - Adults ranged 15-20 per animal on dairy herd in Cass County. (Brandvik). WISCONSIN - Populations variable over State. Some problems reported in Walworth, Rusk, Calumet, Columbia, and Rock Counties. Annoyance to cattle related to control practices on farms. Some dairy herds in Walworth County with few flies, others exhibited moderate annoyance. Some beef herds in Grant and Iowa Counties very much annoyed. Reported biting man about ankles in Bayfield County. (Wis. Ins. Sur.).

HORN FLY (Haematobia irritans) - VERMONT - Ranged 40-50 per head at Hinesburg. (Nielsen, June 29). WISCONSIN - Severe on cattle in Calumet County, but light to moderate in most other areas. Spray practices account for much of variation. (Wis. Ins. Sur.). IOWA - Ranged 20-1,000 (average 147) per side on untreated cattle herd in Story County June 30. (Iowa Ins. Sur.). WYOMING - Ranged 30-350 per head on 2 cattle herds in Platte County. (Parshall). OKLAHOMA - Ranged 800-1,000 per head on cattle in Noble County, averaged 500 per head in Marshall County. Moderate to heavy in Cleveland, Carter, and Cotton Counties. (Okla. Coop. Sur.). TEXAS - Increased in counties in south-central area. Light in Crockett County. (Cole, Neeb). MISSISSIPPI - Counts per head (animals checked) by county as follows: Rankin 60 (70), Montgomery 125 (300), Oktibbeha 140 (50), Tishomingo 10 (60). (Sartor).

TABANID FLIES - WISCONSIN - Hot weather accelerated deer fly activity; localized annoyance reported from Menominee, Langlade, Columbia, Calumet, Iron, and Vilas Counties; annoyance moderate to cattle in Columbia County. (Wis. Ins. Sur.). OKLAHOMA - Tabanus spp. ranged 10-12 per head on horses in Payne County, averaged 4 per head on cattle in Noble County. (Okla. Coop. Sur.).

AMERICAN DOG TICK (Dermacentor variabilis) - WISCONSIN - Populations locally heavy from Crawford, Sauk, and Columbia Counties northward. Generally light or moderate in far northern counties. Highest numbers in low, second-growth brush and blackberry patches. (Wis. Ins. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - TENNESSEE - Specimens collected from Hardin County for a new county record. Determined by R.D. Gordon. (Gordon).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults and larvae of several species ranged 1-12 per 10 sweeps in second cutting alfalfa in Goshen, Platte, and Laramie Counties. (Parshall).

A BRACONID (Cardiochiles nigriceps) - NORTH CAROLINA - This parasite of Heliothis virescens numerous (about 1 per 5 tobacco plants) in Person area of Granville County. (Hunt).

AN ENCYRTID WASP (Holcencyrtus physokermis) - OREGON - Adults emerged in laboratory from Physokermis piceae (spruce bud scale) collected at Portland area nursery, Multnomah County, June 7. Parasitism at this locality light compared to that at Lithia Park, Ashland, Jackson County. This is a new county record. (Westcott).

ICHNEUMONS - ILLINOIS - Bathyplectes curculionis parasitized 67.2 percent of Hypera postica (alfalfa weevil) larvae collected in Champaigne and Ogle Counties June 8 and 10, respectively. (Ill. Ins. Sur.). KENTUCKY - B. curculionis parasitized 3 of 80 H. postica larvae from Jessamine County, none of 186 larvae from Warren County. (Barnett). NORTH CAROLINA - Cocoons of *Campoletis perdistinctus*, a parsite of *Heliothis virescens*, increasing significantly in northern counties as second-generation *H. virescens* larvae increase. (Hunt).

Cereal Leaf Beetle Larval Parasites - NEW YORK - Adults of *Tetrastichus julis* (a eulophid wasp) and *Diaparsis carinifer* (an ichneumon) released June 25 in oatfield in Ontario County. Parasitized *Oulema melanopus* larvae also released throughout infested field where damage evident but not serious. (N.Y. Wkly. Rpt.).

HONEY BEE (*Apis mellifera*) - WEST VIRGINIA - Inspected 1,148 colonies during June; 94 colonies found diseased with American foulbrood, 114 found dead; 86 colonies destroyed. (Cochrane). TENNESSEE - American foulbrood found in Cumberland, Polk, Bradley, and Marion Counties during June. Infection widespread in Cumberland County, light in other counties. (Little).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - No weevils detected above Caprock. Few weevils found in earliest planted cotton in Kent County and in older cotton in Stonewall and Haskell Counties. Catches on wing traps did not increase below Caprock. (Rummel et al.). For Boll Weevil in other areas see page 490.

CEREAL LEAF BEETLE (*Oulema melanopus*) - MICHIGAN - Common in most oatfields in Gladwin County. Control needed in some fields. (Ruppel et. al.). In Presque Isle County, populations heavy enough in 80+ percent of oatfields to need spraying. (Sauer).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Adult, larvae, and pupae collected at Whitfield Cemetery near Accord, Ulster County, June 21. (N.Y. Wkly. Rpt.). PENNSYLVANIA - Flight heavy in Erie, Lackawana, and Lehigh Counties. (Eckess, June 20).

GRASS BUGS - WASHINGTON - *Irbisia pacificus* infested several thousand acres of crested wheatgrass near Reno, Elko County. Seed not developing in head. (Hackett, Retan). UTAH - *Leptopterna ferrugata*, *Irbisia* sp., and other grass bugs marking giant wild rye and crested wheatgrass in parts of Cache County. *Irbisia* spp. light on crested wheatgrass in Box Elder County, abundant in Utah County. *Stenoderma* spp. common on planted grasses in Curlew Valley, Box Elder County. Controls applied to 4,200 acres of planted grasses for *Labops hesperius* and *Irbisia* spp. (Knowlton et al.). NEBRASKA - *L. hesperius* damaged crested wheatgrass in Dawes, Sheridan and Box Butte Counties. Some local control activity Feeding of *Labops* spp. noted in Knox, Holt, Keya Paha, Cherry, Scotts Bluff, Sioux, Cheyenne, Deuel, Garden, Morrill, Kimball, Keith, Lincoln, and Custer Counties. (Bell, June 10).

GRASSHOPPERS - NORTH DAKOTA - Averaged 10 per square yard in weedy and alfalfa ditches in St. Anthony area, Morton County, and near Pretty Rock Butte, Grant County; up to 30 per square yard in alfalfa and grass mixtures in Flasher area, Grant County. *Melanoplus bivittatus* and *M. differentialis* dominant with some *M. femurrubrum*. Mostly first and second instars; not yet moved into fields. (Grasser). MINNESOTA - *Melanoplus femurrubrum* hatch about complete in Chisago, Isanti, Sherburne, and Wright Counties. Infestations scattered; ranged 18-36 per square yard in isolated fields and roadsides. Little movement into cropland. Ditches being cut; grasshoppers will move next few weeks. Few adults noted. (Minn. Pest Rpt.). IOWA - In southwest district, grasshoppers ranged from 10 per square yard in northeastern counties to 15 per square yard in Pottawatamie County; 70 percent second instars. Population 70 percent *Melanoplus differentialis*, 20 percent *M. femurrbrum*. (Iowa Ins. Inf.). NEBRASKA - Surveys week of June 21 indicated "hot spots" in Dixon, Thurston, Cedar, Knox, and Boyd Counties and in Nuckolls and

and Webster Counties; nymphs ranged 30-40 per square yard. Occasional adults of *Melanoplus bivittatus* and *M. sanguinipes* observed. Surveys conducted on Mean Animal Research Center, Clay County, indicated no economic populations. (Bell, Hohnholt). MISSOURI - Grasshoppers ranged 16-40 per sweep in field margins and 4-31 throughout pastures in northeast area. (Munson). KANSAS - *Phlibostroma quadrimaculatum* nymphs very heavy in 30-acre weedy pasture in Comanche County. (Bell). OKLAHOMA - Grasshoppers moderate to heavy on rangeland in Pontotoc, Murray, Carter, Atoka, Pottawatomie, Oklahoma, and Cimarron Counties. Moderate to heavy in alfalfa or crop margins in Pontotoc, Carter, Marshall, Pottawatomie, Lincoln, Cleveland, and Atoka Counties. Damage to home gardens reported in Atoka, Carter, Pottawatomie, Lincoln, and Osage Counties. (Okla. Coop. Sur.). COLORADO - Primarily *Cordillacris* sp. and *Aulocara* sp. infesting about 100,000 acres of rangeland in Otero, Bent, and Las Animas Counties; ranged 25-50 per square yard. Range condition poor due to grasshoppers and drought. Migration into irrigated crops possible. No controls planned. (Watson). NEVADA - *C. pellucida*, *M. bivittatus*, and *M. sanguinipes*, mostly nymphs, ranged 15-20 per square yard on 2,000 acres of hay in Kings River Valley, Humboldt County. (Peters). *M. sanguinipes* adults and nymphs ranged 15-30 in alfalfa hayfields in Diamond Valley, Eureka County, treatments applied or planned. (Hampton). *M. bivittatus*, mostly nymphs, averaged 10 per square yard on 2,000 acres of alfalfa hay at Orovada, Humboldt County. *M. bivittatus* and *M. sanguinipes* ranged 5-10 per square yard in several alfalfa fields in Kings River Valley. *M. sanguipes* adults and nymphs ranged 5-60 per square yard in weedy and abandoned fields comprising several sections in Diamond Valley. (Hampton). *M. sanguinipes* and *M. bivittatus*, mostly nymphs, ranged 10-150 per square yard on 1,920 acres of rangeland and abandoned fields in Kings River Valley. Ranged 1-30 per square yard in other areas; hatch continues. (Hilbig, Peters). WASHINGTON - Fourth and fifth instars of *Oedaleonotus enigma* and *Aulocara elliotti* ranged 12-75 per square yard in 2,880 acres of rangeland at White Swan, Yakima County; severely damaged rangeland and adjoining cropland. (Jackson). *Amphitornus coloradus* and *Aulocara elliotti* damaging rangeland near Goose Lake; ranged 20-30 per square yard on about 5,000 acres. First and second instars of *Camnula pellucida* 75-100 per square yard, damaging 3,000 acres of pastureland near Havillah, Okanogan County. (Nonini).

GYPSY MOTH (*Porthetria dispar*) - VERMONT - Common on home fruit tree plantings. (Nielsen, June 29). PENNSYLVANIA - Pupation observed in Monroe County June 23. (Cameron). Aerially dispersed 14,000 disparlure-baited traps over 9-square-mile area surrounding known infestation in Somerset County; this follows earlier treatment of 180 acres. (Eckess).

JAPANESE BEETLE (*Popillia japonica*) - DELAWARE - First adults found on variety of plants June 26 in New Castle County. (Burbutis, Lesiewicz). MARYLAND - Adult emergence heavy in several areas in Harford, Prince Georges, and Charles Counties. Statewide beetle emergence light to date. (U. Md., Ent. Dept.). WEST VIRGINIA - First adults observed June 12 in Kanawha County. By July 1, favored host trees at scattered sites showed 10-30 percent foliage damage. (Cole). TENNESSEE - Light in Knox, Sevier, Cocke, and Jefferson Counties. (Hammett).

MORMON CRICKET (*Anabrus simplex*) - NEVADA - Adults light and scattered, less than one per square yard, from 6,300-6,500 feet elevation in Big Creek area, Lander County. (Bechtel, Martinelli).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Sterile moth releases in Kern County June 25 to July 1 totaled 3,825,750; total to date 39,892,750. (PPD). ARIZONA - Up to 15 percent rosetted blooms found in Yuma area, Yuma County. One field found in Parker Valley area with 7 percent of bolls infested with early larvae. On June 30, one 40-acre field treated and several other fields treated by strip spraying heaviest infested areas of fields. (Ariz. Coop. Sur.).

WHITEFRINGED BEETLES (*Graphognathus* spp.) - NORTH CAROLINA - Heavily damaged tobacco field found in Fuquary and Varina area of Wake County; 100-plant count indicated 5 percent of plants wilted and dying in 6-acre field. Feeding damage found on about half of stunted plants; 25-30 percent of plants wilted and stunted in 0.5-acre area. (Parker, Hunt). TENNESSEE - Adults observed in known infestations in Crockett, Dyer, Lauderdale, and Rutherford Counties. (PPD). ALABAMA - Larvae very heavy, damaging 30-acre field of cotton at Billingsley, Chilton County. Damage so heavy production may equal cost of seed to plant area. (Griffith, Wilkins). Larvae destroyed corn, weeds, and grass on about one acre at edge of 40-acre corn field in Chilton County. (Futral, Barnett). Larvae damaged strawberry plants in Cullman County gardens. Determined by V.H. Owens. (Whisenant).

HAWAII INSECT REPORT

Cotton - PINK BOLLWORM (*Pectinophora gossypiella*) larvae heavy on wild cotton (*Gossypium barbadense*) at Ft. Kam, Oahu. Infested 50 percent (11 of 22) green bolls examined. (Olson).

Fruits and Nuts - Adults of a SWALLOWTAIL BUTTERFLY (*Papilio xuthus*) at following locations on Oahu: Waipahu (3 caught), Moanalua Gardens (1 observed), Red Hill area (1 observed), Wahiawa (1 caught), and Hawaii Kai (3 observed). (Otsuka et al.). MANGO FLOWER BEETLE (*Protaetia fusca*) adults light to moderate (as many as 7 per floral raceme) on mango (*Mangifera indica*) and kiawe (*Prosopis pallida*) blossoms at Puako and Kawaihae, Hawaii. (Matayoshi).

Forest and Shade Trees - A NOCTUID MOTH (*Melipotis indomita*) and *Polydesma umbricola* (monkeypod moth) light to heavy on monkeypod trees (*Samanea saman*) at Moanalua Gardens, Kapiolani Park, Liliuokalani Gardens, and Ewa, Oahu. In Moanalua Gardens, random samplings from underbark of several trees revealed 20 *P. umbricola* and 10 *M. indomita* larvae. In Kapiolani Park, 29 *P. umbricola* and 111 *M. indomita* larvae found under bark of 3 trees. In Liliuokalani Gardens, no *P. umbricola* and 40 *M. indomita* taken from 6 trees. In Ewa, 21 *P. umbricola* and 14 *M. indomita* larvae found on 9 trees. (Kashiwai, Au).

Miscellaneous - Adults of a GEOMETRID MOTH (*Semiothisa santaremaria*) moderate to heavy at Kamuela, Puako, and Kona, Hawaii; Pukoo, Molokai; and Manele, Lanai. On Hawaii, adults heavy on windows of buildings at night. On Molokai, adults moderate in kiawe grove. Molokai and Lanai are new island records. In Halawa, Oahu, adults heavy, about 400 caught in light trap and 100 observed on wall near light trap. (Ikeda et al.). Adult of a LONGHORNED GRASSHOPPER (*Euconocephalus nasutus*) collected at Hilo, Hawaii. This is a new island record. (Yoshioka). Adult of a BOMBYLIID FLY (*Anthrax distigma*) collected and several others noted at Kanepuu, Lanai, in June. This is a new island record. (Gagne). Adults of a SCENOPINID FLY (*Scenopinus adventicia*) collected in reeds at Kamalo, Molokai, in June 1971. This is a new island record; previously recorded only from Oahu. (Hardy).

CORRECTIONS

CEIR 21(22):383, 385 - HAWAII INSECT REPORT - Paragraph 5 delete "Several adults of a CYDNID BUG ... (Shiroma)." Page 385 paragraph 3, line 8 delete "A CYDNID BUG ... (p. 383)." (Kawamura).

CEIR 21(26):448 - ALFALFA LOOPER (Autographa californica) - OREGON only should read: *ALFALFA WEEVIL (Hypera postica)*. (PPD).

CEIR 21(26):454 - SPRUCE BUDWORM (Choristoneura fumiferana) - CALIFORNIA only should read: *SPRUCE BUD SCALE (Physokermes piceae)*. (PPD).

DETECTION

New County and Island Records - A BOMBYLIID FLY (Anthrax distigma) HAWAII - Lanai (p. 499). BROWN RECLUSE SPIDER (Loxosceles reclusa) TENNESSEE - Hardin (p. 496). AN ENCYRTID WASP (Holcencyrtus physokermis) OREGON - Multnomah (p. 496). FACE FLY (Musca autumnalis) CALIFORNIA - Santa Cruz, Placer (p. 495). A GEOMETRID MOTH (Semiothisa santaremaria) HAWAII - Molokai, Lanai (p. 499). HOLLYHOCK WEEVIL (Apion longirostre) MISSOURI - Morgan; KANSAS - Lyon, Osage, Chase, Marion; NEVADA - Lander (p. 493). A LONGHORNED GRASSHOPPER (Euconocephalus nasutus) HAWAII - Hawaii (p. 499). MAPLE BLADDERGALL MITE (Vasates quadripedes) OHIO - Montgomery, Stark (p. 495). A PHYLLOXERA (Phylloxera caryaecaulis) OHIO - Marion, Medina, Stark, Trumbull (p. 495). A SCENOPINID FLY (Scenopinus adventicia) HAWAII - Molokai (p. 499).

Weather continued from page 484.

pushed onto northern border States Wednesday which was sunny and mild from the northern and central Pacific to the upper Mississippi River Valley. Hot weather continued across the South from southern California to the Atlantic Ocean. Southerly winds swept hot, humid air northward over the eastern half of the Nation. Sultry weather persisted from the Great Lakes to the Gulf of Mexico and eastward to the Atlantic Ocean. By Wednesday, the heat wave over the central Great Plains was broken. Norfolk, Nebraska, registered 93° Tuesday but no higher than 82° Wednesday. As the weekend approached, drier air was moving southward over the North-Central and Northeastern States. Afternoon temperatures in the 80's were common over the weekend in those sections. High humidity persisted in the Southeast. Weekend maximums exceeded 100° over the Far Southwest in southeastern New Mexico and north-central Texas. Elsewhere across the South from northern New Mexico to Mississippi afternoon temperatures over the weekend were generally in the 90's. Weekly average temperatures exceeded the normals from Minnesota and Iowa to the Atlantic Ocean and as far south as the Ohio River and from southern New Mexico to northeastern Texas and in southeastern Texas. Elsewhere, temperatures averaged cooler than normal for late June and early July.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

JULY 1971

The National Weather Service's 30-day outlook for July is for temperatures to average above seasonal normals in central and southern portions of the intermountain region and over the northern half of the Nation east of the Divide. Subnormal temperatures are indicated for the Pacific coast and the Rio Grande Valley. In unspecified areas near normal temperatures are in prospect. Rainfall is expected to exceed normal over the north Pacific coast, the Rio Grande Valley, and portions of the southern Plateau. Subnormal totals are indicated for the Ohio Valley, the middle Atlantic Coast States, the northern Plains, the northern intermountain region, and the central and south Pacific coast. Elsewhere near normal rainfall is expected.

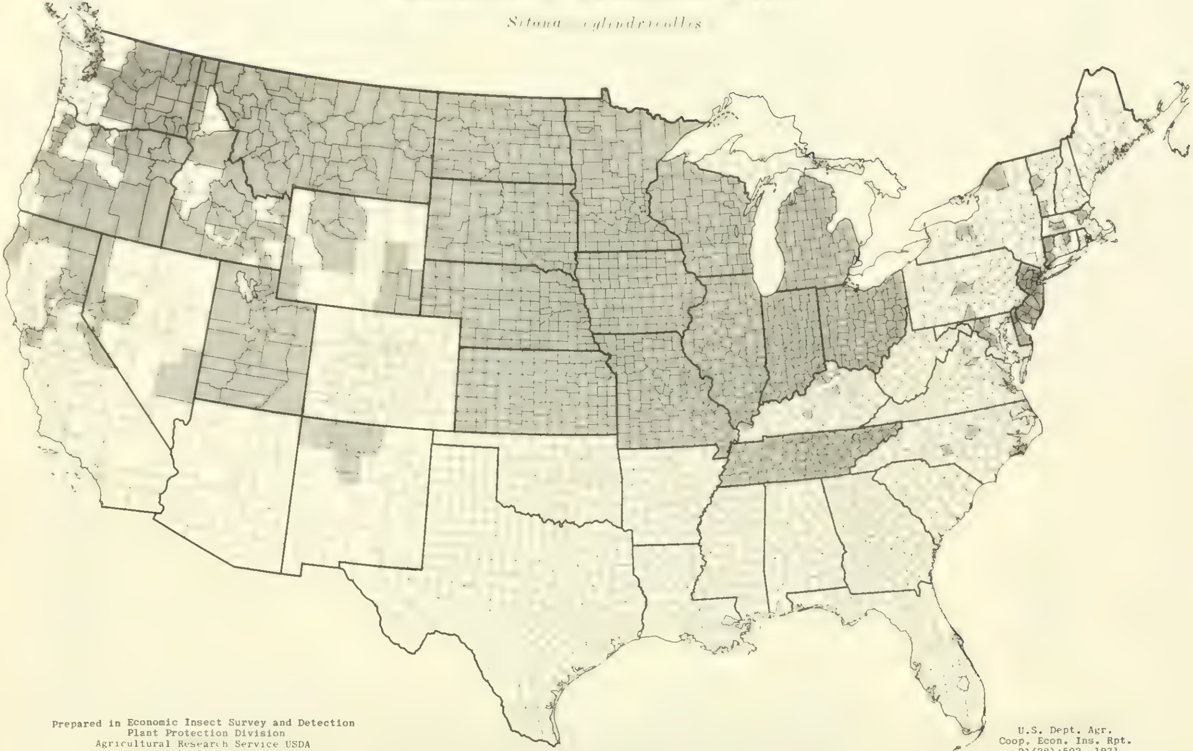
Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap (BL = blacklight I = incandescent MV = mercury vapor O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 6/25-7/1			BL		1			9		12						7			3	10	1	7		
IOWA																								
Dubuque 6/18-28			BL	39			29										97	2	150					
Kanawha 6/22-26			BL	64			30										85		193					
KANSAS (County)																								
Barton 6/23-29			BL	1		16	101			3					5			27	228			1	4	
Brown 6/24,27			BL	36			28			2					2		10	40	70			14		
MINNESOTA																								
Shakopee 6/20-28			BL														8		4					
Worthington 6/20-28			BL														2		41					
MISSISSIPPI																								
Stoneville 6/25-7/1	70-98	0.42	BL	2	5			3		21						1		15	115			61		
MISSOURI (County)																								
Pemiscot 6/25-7/1			BL	19						10							8	46	169		13	32		
Platte 6/24-30			BL	52														104	201			37		
NEBRASKA																								
Mead 6/24-7/1			BL	14			11										9	18	133			3		
North Platte 6/24-7/1			BL	5		58	2										63	27						
NEW HAMPSHIRE																								
Lee 6/28			BL		1												1							
NEW JERSEY																								
Evesboro 6/23-29			BL	16													59	12	27			2		
Seabrook 6/23-29			BL	18													46	12	220			4	4	
NORTH DAKOTA																								
Bismarck 6/24, 26, 28			BL											1										
Fargo 6/28, 29			BL											46				209	7					
OHIO																								
Reynoldsburg 6/24-30			BL	2													1		6					
Wooster 6/25-7/1			BL	117			39										135	41	226					
TENNESSEE																								
Dyer 6/28-7/2			BL	4				2									15	9	20			18		
Madison 6/28-7/2			BL	10	1			1		3							8	139	625			42		
TEXAS																								
Waco 6/28-7/1			BL	46				52	1									4	17	48		20	205	
WISCONSIN																								
Lancaster 6/22-28			BL	15													33	10	146					
Mazomanie 6/24-28			BL														2	2	9					

Distribution of Sweetclover Weevil

Sitona cylindricollis



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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 July 16, 1971 Number 29

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM larvae damaged corn in New York, Virginia, Kentucky, and Ohio. CORN LEAF APHID heavy on sorghum in Texas; increased in Wisconsin. GREENBUG damaged sorghum in Texas, Oklahoma, and Kansas. (pp. 505-506).

EUROPEAN CORN BORER troublesome in several States. (p. 507).

PEA APHID heavy in alfalfa in Idaho and North Dakota. (p. 509).

PECAN NUT CASEBEARER damaged pecans in Oklahoma and Texas. (p. 513).

SPRUCE BUDWORM troublesome in Wisconsin and Michigan. JACK PINE SAWFLY defoliation heavy in Michigan. LARGE ASPEN TORTRIX larvae damaged aspen in Wisconsin. (pp. 513-514).

A GRASS BUG damaged creasted wheatgrass in Nevada. (p. 516).

GRASSHOPPERS heavy on alfalfa in Nevada. (p. 516).

Detection

For new county and island records see page 512.

Reports in this issue are for week ending July 9 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JULY 12

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Summer heat and summer-type precipitation persisted over most of the Nation.

PRECIPITATION: Typical nocturnal thunderstorms occurred from the central Great Plains to the Great Lakes early Monday morning, July 5. One vigorous storm whipped Salina, Kansas, with winds gusting to 60 m.p.h. and hail up to 1 inch in diameter. Two to 4 inches of rain caused minor flooding in eastern Kansas. One to 4 inches of rain fell in some vicinities in eastern Illinois. Seven inches of snow fell at Stampede Pass, Washington, from Monday night to Tuesday forenoon. This is most snow ever to have fallen in July at Stampede Pass. Paradise Inn at 5,550 feet elevation on the south side of Mt. Ranier, Washington, received 3 inches of snow early Tuesday, the depth at 9 a.m. was 132 inches. Never before has an 11-foot depth measurement occurred at Paradise Inn so early in the season. Snow that falls July 1 or later is not counted in the 1970-71 season. The 1971-72 season begins July 1. A light sprinkle occurred at Phoneix, Arizona, Tuesday afternoon. Measurable rain has not occurred at Phoenix in the last 88 days. In 1960, Phoenix received no measurable precipitation for 143 days from March 2 to July 22. Twice have 88-day periods passed without a sprinkle at Phoenix; October 17, 1917, to January 12, 1918, and April 10 to July 6, 1945. A tornado injured several persons on a farm near Minot, North Dakota, Tuesday. The storm produced 3.89 inches of rain. Other tornadoes and severe thunderstorms occurred at scattered locations in North Dakota, Tuesday. Light to moderate showers fell Tuesday and Wednesday from the central Rocky Mountains to Wisconsin, also from southeastern Texas northeastward to West Virginia and Maryland. A station east of Nashville, Tennessee, measured 4.30 inches Wednesday morning; this amount had fallen in the previous 24 hours. Totals exceeded 1 inch at scattered stations from Georgia to Virginia. Two of the largest weekly totals are 5.20 inches at Moline, Illinois, and 4.56 inches at Pittsburgh, Pennsylvania.

TEMPERATURE: Typical summer weather prevailed over most of the Nation last week. Warm humid gulf air covered the eastern half of the country and desert heat lay over the Far Southwest. Boston, Massachusetts, registered 90° Tuesday and Wednesday afternoons. Temperatures exceeded 100° at many Texas stations on several consecutive afternoons. Wichita Falls, Texas, recorded 108° Tuesday. By Wednesday, the 100° heat covered western Kansas reaching 105° at Hill City. Weather of the week continued on page 517.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - NEW YORK - Economic in field of no-till corn in Jefferson County. (N.Y. Wkly. Rpt.). VIRGINIA - Larval damage heavy to sod-planted corn in Lee and Madison Counties, June 22. (Lyle, Grove). KENTUCKY - General on corn in Hopkins County. Destroyed 50 percent of corn at one site. (Barnett). OHIO - Larvae, all stages, damaged field corn in Medina County. (Thoburn). Heavy in Ashtabula County. (Anderson). Also reported in Crawford, Auglaize, and Champaign Counties. (Lyon). MICHIGAN - Counts steadily increasing at Lenawee County blacklight station; total of 183 moths collected. Larval damage to small grains generally light, and danger near end. (Newman). Larval damage spotty in few fields of field corn in Ogemaw County. (Ruppel). WISCONSIN - Larvae remain light in corn, lodged grains, and alfalfa. Surveys in Rock County revealed very heavy parasitism by Apanteles militaris (a braconid). (Wis. Ins. Sur.). MINNESOTA - Moths heavier in light traps. Counts from Lamberton, Redwood County, increased sharply past 7 days. Counts heavier in south-central district light traps. (Minn. Pest Rpt.). NEBRASKA - Larvae average 6 per square foot in bromegrass, Saunders County. Damage limited to small area. (Roselle).

CORN EARWORM (Heliothis zea) - ARIZONA - Larvae in sorghum at Marana, Pima County, and at Buckeye, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Larvae on 10-100 percent of cornstalks at Carlsbad and Artesia, Eddy County, and at Roswell, Chaves County. (Mathews). Infested 10-30 percent of stalks at Hatch, Dona Ana County. (N.M. Coop. Rpt.). TEXAS - Light on grain sorghum in Caldwell County. Larvae averaged 0.4 per plant in 5 fields in Brazos, Burleson, and Robertson Counties. Reported from several fields in Denton, Collin, and Hunt Counties on grain sorghum. Infestations apparently decreasing. (Cole et al.). OKLAHOMA - Heavy on corn in Cleveland, Garvin, Beckham, and Texas Counties. (Okla. Coop. Sur.). NEBRASKA - Infested 20 percent of corn in one small field in Buffalo County. (Roselle). ARKANSAS - Moth counts on sugarline (0.5 mile of row) by county: Pulaski 1,083 (soybeans, cotton). Moth counts very heavy on sugarlines in Lafayette County. July moth flights peaked in some areas. Occasional larva in blooming sorghum. (Boyer). TENNESSEE - First through third instars on ears of sweet and field corn in central areas. Infested 40 percent of ears of sweet corn and 10 percent of field corn. (Gordon). ALABAMA - Occasional larva in 10 early grain sorghum fields in Montgomery and Dallas Counties. (McQueen). NORTH CAROLINA - Second-generation larvae increased from 8 to 326 in 500 feet of row (50 feet of row per field in Columbus County); 36 at Clayton, Johnston County, and none in Lewiston, Bertie County. Larval counts expected to increase in Piedmont area. (Hunt). NEW JERSEY - Few moths in light traps statewide. (Ins.-Dis. Newsltr.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Generally light on corn and sorghum at Carlsbad and Artesia, Eddy County, and at Roswell, Chaves County. (Mathews). TEXAS - Ranged 0-15 per plant in Brazos, Robertson, and Burleson Counties. Beneficial insects heavy and reduced aphid populations. R. maidis increased in grain sorghum in High Plains. Heavy in Hale, Crosby, Floyd, Lubbock, Bailey, Lamb, and Hockley Counties. Light to medium in Terry, Lynn, Carson, and Deaf Smith Counties. (Rummel, Green). OKLAHOMA - Ranged 0-100 per plant of young sorghum in Major, Alfalfa, Woods, Harper, and Ellis Counties. (Okla. Coop. Sur.). KANSAS - Generally, moderate to heavy in whorls of sorghum in eastern Shawnee, western Douglas, and Jackson Counties. Decreased in some fields in Shawnee County; earlier yellowing and reddening of terminal leaves more evident than during latter part of period. (Bell). MISSOURI - Light on sorghum throughout western half of State. (Munson). WISCONSIN - Increased 10 to 20 times at some sites. Colonies containing up to 100 individuals noted in several fields in central areas. Currently, only about 40 percent of plants infested at sites surveyed. (Wis. Ins. Sur.). ILLINOIS - Beginning to appear in corn; but numbers light. (Sur. Bull.). INDIANA - Infestations ranged 0-40 percent in 7 of 22 fields in south-southwest area; 0-20 percent in 5 fields in south-southcentral area; 2 of 7 fields infested lightly in south-southeast area. (Meyer). MARYLAND - Building up in corn in Talbot, Caroline, and Dorchester Counties. Heaviest damage averaged 6 percent in 50-acre field near Williston, Caroline County. (U. Md., Ent. Dept.). ALABAMA -

Maize dwarf mosaic and/or corn stunt virus in scattered fields in Shelby, Dallas, Montgomery, and most other counties. R. maidis and other aphids light in all corn examined. (McQueen).

GREENBUG (Schizaphis graminum) - ARIZONA - Starting buildup on sorghum at Bonita, Graham County and in other areas of Cochise County. Ranging 25-150 per plant. (Ariz. Coop. Sur.). TEXAS - Populations reported throughout most central and north-central counties. Light and localized in Caldwell County on grain sorghum. Averaged 0-1 per plant in Brazos, Burleson, and Robertson Counties. Beneficial insects heavy with parasitism evident in many of fields. Greenbugs continued to damage grain sorghum in Ellis and Navarro Counties. Counts of 260 per leaf noted in these counties. Grain sorghum with lower 2 leaves dead. Several fields treated, parasitism seemed to be decreasing infestations. Greenbug light in several counties in Rolling Plains. Light on grain sorghum in El Paso, Hudspeth, Reeves, and Pecos Counties. Populations in panhandle area remained light. (Green et al.). OKLAHOMA - Moderate to heavy on sorghum in Ottawa County. One field sprayed in Texas County. Ranged 5-60 per plant on occasional plants in field of 24-inch tall grain sorghum in Major County, but younger fields (12-15 inches) in several northwest counties negative. (Okla. Coop. Sur.). KANSAS - Treatments needed in several sorghum fields in eastern Shawnee, western Douglas, and Jackson Counties. Populations appear to be increasing and predators and parasites generally not abundant enough to control populations. Greenbug ranged (per plant) as follows by county (number fields checked in parentheses): Shawnee 1,000-1,500+ (4); Douglas 300-1,600+ (3); Jackson 50-2,000 (3); and Geary 35-630 (3). Most sorghum 30-40 inches high; many in boot stage. Heavier infestations (about 1,200+ per plant) with lower 2 leaves dead, and in one field in Jackson County lower 4 leaves dead. Report of heavy infestation in one sorghum field with lower 2 leaves dead in Pawnee County. (Bell).

NEBRASKA - S. graminum declining in some southwest areas; increasing in eastern counties. Colonies of 50 individuals in some fields in Lancaster County. (Klein, Nelson). IOWA - Up to 2 lower leaves dead in sorghum field in Ringgold County. Surveys in 12 additional fields indicated 2-4 leaves per plant infested. (Iowa Ins. Sur.).

POTATO LEAFHOPPER (Empoasca fabae) - NEW YORK - Increasing in alfalfa. Control needed when nymphs 1-2 per 10 sweeps. (N.Y. Wkly. Rpt., July 6). MARYLAND - Ranged 4-30 per sweep of alfalfa in Frederick, Harford, Baltimore, and Howard Counties. Expected to increase. (U. Md., Ent. Dept.). OHIO - Damage noted statewide. (Flessel). MICHIGAN - Adults common and some nymphs and leaf rolling in dry beans in Bay County. Nymphs and adults common in alfalfa in Ingham County. Growers should stay alert. (Ruppel et al.). WISCONSIN - Adults averaged 1 per sweep of alfalfa in Columbia County and 6 per 10 sweeps in southwestern counties. Populations abundant in Rock and Walworth Counties, nymphal counts as high as 15 per sweep and adults 5 per sweep. Adults averaged 2 per plant on lima beans in Rock County and trace on potatoes and snap beans in Portage and Waushara Counties. Common on deciduous nursery stock in all southern areas. (Wis. Ins. Sur.).

TOBACCO BUDWORM (Heliothis virescens) - TENNESSEE - Immatures continue to cause moderate to heavy damage in tobacco surveyed in central areas. Some controls applied. (Gordon).

HORNWORMS (Manduca spp.) - KENTUCKY - M. sexta (tobacco hornworm) larvae averaged less than 1 per 20 tobacco plants in Caldwell County. One field in Hopkins County averaged 3 per plant. (Barnett). MICHIGAN - Limited collections of M. sexta made at blacklight stations. M. quinquemaculata (tomato hornworm) moths light at all blacklight stations as far north as Montcalm County. Egg laying will begin primarily on potatoes and tomatoes. (Newman). MARYLAND - Manduca spp. egg laying continues on tobacco in Charles, St. Marys, Calvert, and Prince Georges Counties. Heaviest damage 10-15 percent in several fields in St. Marys County. Second and third instars in most fields. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Third instars beginning to enter stalks in eastern areas. Infestations of 70-90 percent of early corn common in most eastern areas, 20-70 percent in Clay County. Control activity continuing with shortage of recommended granular products. (Roselle, Frank). Borers ranged 5-25 per plant in 4 untreated cornfields in Knox and Pierce Counties; 4 fields. Mostly first to last instars. (Keith, Berogan). IOWA - Larvae in 4 fields: 6 percent fourth instar, 88 percent fifth instar, and 6 percent pupated. Third generation likely in 1971. (Iowa Ins. Sur.). MINNESOTA - Serious throughout southern half of State. Overall infestations heaviest since 1950's. Many fields near or past control period. Mostly third instars and above in south-central and southeast districts and mostly first instars in southwest and west-central districts. Egg masses still light in southwest and southeast districts, but egg laying ended in these districts. Borer survival heavy and as many as 10 larvae per stalk in some fields. Fields sprayed in Redwood, Fillmore, Brown, Goodhue, Dakota, Olmsted, and Watonwan Counties. (Minn. Pest Rpt.). WISCONSIN - Blacklight trap catches light at all reporting sites. Moths peaked about July 3 in eastern counties. (Wis. Ins. Sur.). MICHIGAN - Larvae damaged some field corn in Isabella and Montcalm Counties. Little damage seen in St. Clair County. (Ruppel et al.). INDIANA - Infestations ranged 0-24 percent in south-southwest and south-southcentral area corn; 0-48 percent in south-southeast area. (Meyer). KENTUCKY - Larvae in 10 percent of Hopkins County corn with 10-20 percent of plants damaged per field. (Barnett). SOUTH CAROLINA - Second-generation borer infestations appearing throughout State. (Thomas).

NORTH CAROLINA - O. nubilalis infestations ranged up to 28 (averaged 4) percent in sweet and field corn in Harnett, Sampson, Bladen, and Cumberland Counties, 50 plants per field. (Hunt). VIRGINIA - Generally very light in southern Piedmont and southern Tidewater areas. Infestations 5-20 percent in Prince Edward, Prince George, Southampton, Greensville, Brunswick, Mecklenburg, Pittsylvania, and Henry Counties (Allen). Damaged 60 percent of stalks in some Carroll County fields (Tabor, July 1). MARYLAND - Moths averaged 6 per night June 30 to July 6 in Queen Annes, Dorchester, and Worcester Counties. Infested corn on Eastern Shore ranged 8-80 percent (late whorl to early tassel stages), in central areas 0-96 percent (early whorl to mid-whorl). (U. Md., Ent. Dept.). DELAWARE - Adults of first brood beginning to emerge in Sussex County July 5-6. Emergence now about 1 percent. (Burbutis).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Heavy and localized on grain sorghum in Jackson County. Light in whorl of grain sorghum in Glasscock County. (Neeb, Cole). ILLINOIS - Appearing in whorl stage corn particularly in southern section. (Sur. Bull.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Light to heavy and widespread in Jackson and Matagorda Counties. Larvae as many as 40 per head in some fields of Jackson County. (Cole).

CORN ROOTWORMS (Diabrotica spp.) - MINNESOTA - Heavy rains and wind at Minneapolis and St. Paul lodged many cornfields. Lodging in Dakota County, 90 percent in field with 10 larvae per plant and 10 percent in adjacent rootworm-free fields. From first instar to pupae in southeast and southwest districts. Larvae 6 per plant in Lincoln County field. Highs of up to 12 larvae per plant in Winona and Goodhue Counties. Adults early as larval development has been rapid. (Minn. Pest Rpt.). WISCONSIN - Limited surveys in southern Dane and northern Rock Counties revealed larvae one-fourth to three-fourths grown in volunteer corn, in peas, and oats. Lodging of plants should become noticeable in southern areas. (Wis. Ins. Sur.). ILLINOIS - Occasional D. longicornis (northern corn rootworm) and D. virgifera (western corn rootworm) adult seen. Demonstrative plots for larval control indicated poorer results than expected in some instances. (Sur. Bull.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - COLORADO - Larvae damaged untreated corn in Boulder and Weld Counties. (Rothman, Hantsbarger). MISSOURI - Adults averaged 10 per plant in one field in Barton County. Larvae and pupae in fields. (Huggans, Keaster). No other infestations observed in southwest area. (Munson). IOWA - Adult collected at Ames, Story County, on July 6, earliest recorded date for emergence on this plot. (Iowa Ins. Sur.). NORTH DAKOTA - Root damage evident on corn in Richland County. (McBride).

CORN FLEA BEETLES (Chaetocnema spp.) - ARIZONA - C. ectypa (desert corn flea beetle) medium to heavy with leaf damage in some sorghum fields in Yuma County. (Ariz. Coop. Sur.). ALABAMA - C. pulicaria (corn flea beetle) and other flea beetles statewide on corn and may be vector of scattered infections of Stewart's disease in corn. (McQueen). MARYLAND - C. pulicaria increasing in Baltimore, Harford, and Frederick Counties. Heaviest counts 5-6 per leaf in late whorl stage corn near Churchville, Harford County. Damage levels ranged 8-15 percent in central areas. (U. Md., Ent. Dept.).

MAIZE BILLBUG (Sphenophorus maidis) - MARYLAND - Destroyed 80 percent of 3-acre stand of corn near Kennedyville, Kent County. (U. Md., Ent. Dept.).

SORGHUM MIDGE (Contarinia sorghicola) - ALABAMA - Occasional adult in 10 early blooming grain sorghum fields in Dallas and Montgomery Counties. (McCabe et al.). ARKANSAS - Did not average more than 1 per 100 heads of sorghum in 14 of 26 fields in Jackson, Cross, Woodruff, Conway, and Pope Counties. Light in east-central and northeast areas. (Boyer). TEXAS - Infesting late grain sorghum in De Witt, Jackson, and Refugio Counties. Spotted infestations in Brazos, Robertson, and Burleson Counties. Adults from Milam, Williamson, Bell, Hill, and McLennan Counties. Populations increased in most north-central counties. (Cole et al.). MISSOURI - Light (2-4 per head) on newly emerged sorghum heads in southeast area. (Houser).

SEEDCORN MAGGOT (Hylemya platura) - VERMONT - Much damage to sweet corn at Bennington County. (Nielsen).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Heavy on corn in El Paso County. Lower 6 true leaves on most plants destroyed. Mites started building up in larger numbers on crops about 7 days prior to tasseling stage. (Neeb).

CHINCH BUG (Blissus leucopterus leucopterus) - KANSAS - Ranged 0-25 (averaged 6) per plant in field of 4-inch sorghum in Dickinson County. Treatment in sorghum reported in Dickinson, Marion, Harvey, Shawnee, Wilson, and Crawford Counties. (Bell).

YELLOW SUGARCANE APHID (Sipha flava) - ARKANSAS - Very light on sorghum in Woodruff County. This is a new county record. (Boyer).

SMALL GRAINS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Damaged scattered oatfields in northeast district. Up to 4 percent of culms bored into and lodged in 3 fields in Knox and Pierce Counties. Third to last instar. (Kumpost et al.).

A FIELD CRICKET (Acheta assimilis) - NORTH DAKOTA - Nymphs 6 per square yard in alfalfa, soybeans, and small grain in Cass County. (Brandvik).

TURF, PASTURES, RANGELAND

SAGEBRUSH DEFOLIATOR (Aroga websteri) - NEVADA - Infested almost all sagebrush in Pine Valley, Eureak County; expect complete defolation. (Lauderdale).

BLUEGRASS BILLBUG (*Sphenophorus parvulus*) - IOWA - Collected from lawn at Council Bluffs, *Pottawattamie County*, by *C. Johnson* July 7. Identified by R. Roselle. (Iowa Ins. Sur.). NEBRASKA - Larvae damaged bluegrass lawns and fairways in several locations of eastern areas. (Jensen, Roselle).

GRASSHOPPERS (*Melanoplus* spp.) - ARKANSAS - Increased in dry western areas. Arrangements *made for* aerial spraying of some pastures in Washington County. (Boyer).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - OREGON - Larvae one per 10 sweeps in Pendleton and Pilot Rock *areas, Umatilla* County. Several fields east of Pilot Rock uninfested. Larvae ranged 2-10 per sweep in Grant County. Adults 1 per sweep in Mt. Vernon and Dayville areas and 2 per sweep at Long Creek. Larvae 11 per 30 sweeps in Mitchell area, Wheeler County. Larvae less than 1 per 10 sweeps in Heppner and Ruggs areas, Morrow County. This is a new county record. (Brown, Penrose). IDAHO - Mostly first and second instars, 15-40 percent tip feeding. Adults ranged 6-30 per 10 sweeps at Fairfield, Camas County, June 22. (Hazen, Sutherland). Larvae 262 and adults 44 per 25 sweeps of alfalfa at Aberdeen, Bingham County, June 11, and larvae 1,223 and adults 26 on June 21. Untreated fields in area severely silvered. (Carpenter). WYOMING - Larvae ranged 170-500 per 10 sweeps in 3 uncut fields near Powell, Park County. Much lighter in cut fields; most fields cut. Pupation 60-70 percent where alfalfa cut. Up to 25 per 10 sweeps in Goshen County. (Burkhardt). COLORADO - Still damaging alfalfa after first cutting in Weld County. Control recommended. Pupation should begin in 7 days. (Urano). NEW MEXICO - Generally light at Albuquerque, Bernalillo County. (Heninger).

NEBRASKA - Major *H. postica* larval activity for season appears past. Larvae 0.8 per 100 sweeps in *24 Dawson* County fields. New adults averaged 12.1 per 100 sweeps. (Manglitz). IOWA - One adult collected per 400 sweeps in alfalfa field in Boone County, July 6, by G. Lentz. (Iowa Ins. Sur.). WISCONSIN - Few adults still active and mid-instars average about 1 per 10 sweeps of alfalfa in southern areas. In Columbia County field, larvae averaged 2 per 10 sweeps. Some feeding damage evident. (Wis. Ins. Sur.). MASSACHUSETTS - Adults 3 per 100 sweeps in Hampshire County field. (Miller). VERMONT - Populations much lighter in most areas; some heavy damage mostly on second cut alfalfa. Parasitism increased. (Nielsen).

LYGUS BUGS (*Lygus* spp.) - WASHINGTON - *L. hesperus* and *L. elisus* adults and nymphs up to *1.5* per sweep in 15 *alfalfa seed fields* of *Touchet* and Lowden area, Walla Walla County. (Johansen, Eves). WYOMING - Adults and nymphs 10-60 (average 40) per 10 sweeps in uncut alfalfa near Powell, Park County. (Burkhardt). NEVADA - Adults 3-6 per sweep in Reese River, Lander County, alfalfa seed fields. (Hilbig). ARIZONA - Averaging 800 per 100 sweeps in flowering alfalfa on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - *Lygus* spp. averaged 25-150 per 25 alfalfa sweeps at Roswell, Chaves County. *(Mathews). MASSACHUSETTS* - Adults of *L. lineolaris* (tarnished plant bug) 52 per 100 sweeps in Hampshire County alfalfa. *(Miller).*

PEA APHID (*Acyrthosiphon pisum*) - WYOMING - Ranged 40-120 (average 74) per 10 sweeps in *uncut alfalfa near Powell*. Park County. (Burkhardt). MASSACHUSETTS - Counts of 202 per 100 sweeps in Hampshire County field. (Miller). IDAHO - Ranged 20 to 1 cupful per sweep in 22,000 acres of Canyon County, alfalfa. Controls applied. (Homan). Scattered infestations in Clearwater River drainage in Nez Perce, Clearwater, and Lewis Counties required controls. (Kambitsch, et al.). NEVADA - Ranged 20-40 per sweep in Reese River, Lander County, alfalfa seed fields. (Hilbig). NORTH DAKOTA - Heavy, up to 5,000 per 100 sweeps, on second crop alfalfa in Cass County. (Brandvik).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MASSACHUSETTS - Counts of 20 adults per 100 sweeps in Hampshire County field. (Miller). WISCONSIN - Adults numerous in most alfalfa swept in southern half of State. Counts 8-10 per sweep. (Wis. Ins. Sur.).

THREECORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Averaging 250 per 100 sweeps of alfalfa in Yuma Valley, Yuma County. (Ariz. Coop. Sur.).

GRASSHOPPERS - MICHIGAN - Mostly *Melanoplus femurrubrum* (redlegged grasshopper) nymphs 292 in 20 sweeps of alfalfa in Ingham County. Watch field crops later in season. (Ruppel, Romers).

SOYBEANS

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - TENNESSEE - Adults 4-5 per 10 stalks caused moderate damage to 2 inch tall soybeans in Franklin County. (Cagle).

STRIPED BLISTER BEETLE (*Epicauta vittata*) - IOWA - Damaged 20 rows (200 linear feet each) in Ringgold County field July 7. Feeding on lower parts of soybeans in Mahaska County (6 per linear foot), and Van Buren and Wapello Counties in spots of 0.25-0.5 acre. Damaged end rows of field in Washington County July 7. (Iowa Ins. Sur.).

THREECORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ALABAMA - Adults light in Dallas County. Occasional 10 to 20-inch plant falling due to earlier girdling. (Smith et al.).

GREEN CLOVERWORM (*Plathypena scabra*) - ILLINOIS - Still light, but situation will bear watching. (Sur. Bull.).

PEANUTS

A BURROWING STINK BUG (*Pangaeus bilineatus*) - TEXAS - Increased slightly in Frio County. Fields treated and excellent results obtained. (Green).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - TEXAS - Continuing to increase in irrigated peanuts in Eastland and Comanche Counties. Most dryland peanuts still small and only light infestations. Larval infestations in Hill County 10 percent and in Comanche and Eastland Counties ranged 0-26 percent. (Hoelscher).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In McLennan and Falls Counties, punctured squares averaged 3 (maximum 12) percent in 48 treated fields; in 11 untreated fields averaged 4.9 (maximum 27.3) percent. (Cowan et al.). OKLAHOMA - Puncutred squares ranged 1-4 percent in Tillman County. Light to moderate in Garvin County. (Okla. Coop. Sur.). AKRANSAS - Below control level in most fields. Total of 6,935 fields surveyed; 2,174 infested. Surveys indicate controls may be needed in more fields than during 1970 for first-generation weevils. (Barnes et al.). Punctured squares more than 50 percent in Pope County from overwintered weevils. Numbers appear to be declining. (Boyer). MISSISSIPPI - In delta counties, punctured squares averaged 2.5 percent in 12 of 22 fields. In pheromone-baited wing traps recovered 5 weevils in Washington County and 4 in Bolivar County. (Pfrimmer et al.). ALABAMA - First "hatchout" of first generation on early cotton over south and central areas. Egg laying in squares is general. Punctured 20-75 percent of squares in older fields in Greene, Dallas, Montgomery, Lee, and other counties. Much cotton not fully fruiting and thereby first "hatchout" of weevils just begun or not at all. Damage increased slightly in north area with occasional small field approaching economic levels of 10-25 percent squares punctured. Weather most favorable in 10+ years for survival of larvae and pupae in squares during this first generation. (McQueen). TENNESSEE - Punctured squares ranged 10 to 32 percent in infested fields. Infestations heavier in older cotton. Control needed in many of fields in southern tier of counties. First-generation weevils will appear in older cotton by July 20. Expect lull between generations, July 15 and 20. (Locke). NORTH CAROLINA - Weevils 20 in 90 sexlure traps in Northampton County. Egg punctures appearing on squares on July 1; First-generation larvae not observed to date. (Threatt, Bradley). SOUTH CAROLINA - In Florence County, emergence of overwintered weevils complete, few first-generation weevils in test fields. No weevils taken on wing traps and live traps. (Taft et al.).

BOLLWORMS (Heliothis spp.) - ARIZONA - Larvae 3 and eggs 23 in 430 fields checked in Graham County and damaged squares 0.3, terminals .07, squares .03 and eggs 0.4 per 100 plants in Pinal County June 30 to July 6. H. zea should be watched for buildup in Salt River Valley, Maricopa County. Larvae found. (Ariz. Coop. Sur.). TEXAS - In McLennan and Falls Counties, increase in moth catches in blacklight traps. Some increase in egg laying in younger cotton. Predators migrating into cotton. Eggs averaged 1.9 and larvae 0.2 per 100 terminals in 48 treated fields; in 10 untreated fields eggs averaged 2 and larvae 0.1 per 100 terminals. Injured squares averaged 0.6 percent in 48 treated fields. Of 30 larvae collected from cotton and identified, 22 H. virescens. (Cowan et al.). ARKANSAS - Moth counts light in east and northeast areas. Heavy count of 1,050 moths in 0.5 mile row of cotton and soybeans July 6 and 204 on July 8 in Pulaski County. Eggs and small larvae expected soon. Of 6,935 fields surveyed; 1,621 infested. (Barnes et al.). MISSISSIPPI - In delta counties, eggs and larvae light in terminals. Injured squares averaged 4.4 percent in 20 of 22 fields. (Pfrimmer et al.). ALABAMA - Eggs and larvae increased in Dallas and Montgomery Counties; 10-25 percent of terminals slightly damaged in many fields. Only occasional larva survived heavy predator buildup. Young larvae 7-30 per 100 terminals and in squares in 2 nearby fields. Effort increased to stop this outbreak. (McQueen). SOUTH CAROLINA - In Florence County, populations light. Moth activity peaked week ending July 2. Currently decreasing. Blacklight trap collections totaled 61 H. zea and no H. virescens. (Taft et al.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae at Bowie and San Simon, Cochise County. Larvae increasing on west side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - ARIZONA - Some previously treated fields in trouble again in Yuma County. Wrong insecticide used. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - NEW MEXICO - Five per 25 sweeps at Carlsbad, Eddy County. (Mathews). OKLAHOMA - Averaged 50 per 100 plants of cotton at Tipton, Tillman County. (Okla. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults 1 and nymphs 0.3 per 100 sweeps in 430 fields in Graham County and adults 7, nymphs 1, and damaged squares 3 per 100 plants in Pinal County June 30 to July 6. Averaging 50 per 100 sweeps in Yuma Valley, Yuma County. Increasing at Parker Valley. Some fields strip sprayed at Parker. (Ariz. Coop. Sur.). TENNESSEE - L. lineolaris (tarnished plant bug) still causing damage and increasing but below control levels. (Locke, Johnson).

TOBACCO

BLACK CUTWORM (Agrotis ipsilon) - MARYLAND - Damage ranged 40-60 percent in several St. Marys County fields totaling 10 acres. (U. Md., Ent. Dept.).

SUGAR BEETS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Eggs in nearly all Park County fields and in many Washakie County fields. Few late instars. (Burkhardt). MINNESOTA - Maggots averaged 1.2 per beet in Kittson County near Robbin; infestations ranged 6-20 percent. Plants stunted with many root hairs. (Minn. Pest Rpt.).

YELLOWSTRIPED ARMYWORM (Spodoptera ornithogalli) - ARIZONA - Active, averaging 1 per plant, in Stewart district, Graham County. (Ariz. Coop. Sur.).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Eggs, larvae, and few adults remain at Powell, Park County. Some controls applied. (Burkhardt).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Larvae 2-3 per head of sunflowers in intermediate to late stage of maturity in Reeves County. (Neeb).

HOP APHID (Phorodon humuli) - OREGON - Heavy on hops in Grants Pass, Josephine County, due to cool weather. Controls being applied 2 weeks later than normal. (Larson).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MASSACHUSETTS - Adults, eggs, and larvae 10-30 per untreated potato plant in Hampshire County. (Jensen). MAINE - Some injury from Caribou south in Aroostook County. (Gall).

VARIEGATED CUTWORM (Peridroma saucia) - OHIO - Larvae averaged 6.5 per potato plant on 35 acres near Smithville, Wayne County. (Rings).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Heavy on potatoes at Dover, Kent County. (Boys).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - NEW MEXICO - Damage extends into heads in most cabbage fields at Albuquerque, Bernalillo County. (Heninger).

STRIPED FLEA BEETLE (Phyllotreta striolata) - OHIO - Adult damage heavy on radishes in Wayne County on July 2. (Rings).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Alates on brush in Somerset County. Stunted and matted growth on young asparagus ferns. (Ins.-Dis. Newsltr.).

DETECTION

New County and Island Records - ALFALFA WEEVIL (Hypera postica) OREGON - Morrow (p. 509). HOLLYHOCK WEEVIL (Apion longirostre) KANSAS - Dickinson, Morris, Riley; MISSOURI - Cole, Linn, Livingston (p. 513). A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Allegheny (p. 513). A LYGAEID BUG (Tempyra biguttula) HAWAII - Lanai (p. 517). YELLOW SUGARCANE APHID (Sipha flava) ARKANSAS - Woodruff (p. 508).

DECIDUOUS FRUITS AND NUTS

SAN JOSE SCALE (Quadraspidiotus perniciosus) - WEST VIRGINIA - Killed half of branches on young apple trees in Kanawha County. (Cole). OKLAHOMA - Killing ornamental plum at Stillwater, Payne County. (Okla. Coop. Sur.). WASHINGTON - White caps and black caps on unsprayed apple trees near Yakima, Yakima County. (Johnson). Crawlers active on apple near Naches. (Gregorich).

APHIDS - CALIFORNIA - Brachycaudus helichrysi adults 25 per leaf on scattered pears and apples at McArthur, Shasta County. (Cal. Coop. Rpt.).NEW MEXICO - Myzus persicae (Green peach aphid) severe in spots, but generally light to medium on plum trees with some twisted leaves at Albuquerque, Bernalillo County. (Heninger). PENNSYLVANIA - Aphis pomi (Apple aphid) heavier on apple, 150 per leaf, at Arendsville, Adams County. (Asquith). MAINE - A. pomi still increasing in some orchards. Severely curled leaves on many terminals and noticeable honeydew in Kennebec County. (Wave).

SPIDER MITES - OREGON - Tetranychus urticae (twospotted spider mite) and Panonychus ulmi (European red mite) increased in commercial pear orchards at Medford, Jackson County. Up to 100 per 200 leaves but much lower than in 1970 at this time. Typhlodromus spp. remain heavy. (Penrose). MARYLAND - P. ulmi counts not economic, expected to increase with continued warm weather. (U. Md., Ent. Dept.). PENNSYLVANIA - P. ulmi heavier on apple, 4-5 per 100 leaves, at Arendsville, Adams County. (Asquith).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Destroyed 17-41 percent of clusters on unsprayed pecans in Rogers County. (Okla. Coop. Sur.). TEXAS - Eggs and damaged nuts on pecans in De Witt County. Some pecan groves in this area sprayed for second time. (Cole).

WALNUT CATERPILLAR (Datana integerrima) - NEW MEXICO - Very light on few pecan trees surveyed at Carlsbad, Eddy County. (Mathews). OKLAHOMA - Heavy on black walnut in Mayes County and pecan in Wagoner County. On pecans in Payne County. (Okla. Coop. Sur.). ALABAMA - Larvae heavy in almost all pecan groves in Grand Bay, Mobile County. Second-generation larvae first observed July 3. (Seibels et al.).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Heavier in pecans in Dallas County but not so heavy as in record infestation of 1970. (Alsobrook). OKLAHOMA - Scattered moderate to heavy infestations on pecan trees in several counties. (Okla. Coop. Sur.).

ORNAMENTALS

HOLLYHOCK WEEVIL (Apion longirostre) - KANSAS - Adults on hollyhock in nurseries in Dickinson, Morris, and Riley Counties. Determined by K.O. Bell and W. Iselin. These are new county records. (Bell). MISSOURI - Adults collected in Cole County (Hanning) and in Livingston and Linn Counties. (Burgess). These are new county records. (Munson).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Moderate to heavy on evergreens in northern, central, southeast, and south-central areas. (Okla. Coop. Sur.). TENNESSEE - Damage moderate to heavy statewide. Controls ineffective as larvae mature. (Cagle, Jennings). WEST VIRGINIA - Larvae damaged ornamentals throughout Kanawha County. (Cole). DELAWARE - Early instars on trees statewide. (Burbutis).

A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Adults heavy, 2-3 per leaf, on rows of (Pieris japonica) (Japanese andromeda) June 21 in nursery at Pittsburgh, Allegheny County. This is a new county record. (Simons).

FOREST AND SHADE TREES

SPRUCE BUDWORM (*Choristoneura fumiferana*) - MINNESOTA - Moth emergence common in Koochiching and northern St. Louis Counties. Pupae in Cook County. (Minn. Pest Rpt.). WISCONSIN - Pupae dominant in Oneida County June 28. Defoliation light on 6,000 acres of mixed balsam fir and spruce. (Wis. Ins. Sur.). MICHIGAN - Adults emerged everywhere in outbreak areas of Luce and Mackinac Counties. (Johnson).

JACK PINE BUDWORM (*Choristoneura pinus*) MINNESOTA - Mostly pupae, some sixth instars still in east-central area. (Minn. Pest Rpt.). WISCONSIN - Fourth to sixth instars dominant in Vilas County June 27. Defoliation light on 3,000 acres of jack pine. Parasitism by *Apanteles* heavy. Pupation 80 percent in Douglas and Bayfield Counties July 7. Ranged 5-7 per 15-inch of twig. (Wis. Ins. Sur.). MICHIGAN - Endemic populations only in Luce County. Pupation begun. (Johnson).

JACK PINE SAWFLY (*Neodiprion pratti banksianae*) MICHIGAN - Outbreak in north Luce County on about 15,000 acres. Defoliation most severe in overmature stands and on adjacent young trees. Late instars stripping many trees. (Johnson).

YELLOWHEADED SPRUCE SAWFLY (*Pikonema alaskensis*) MINNESOTA - Again widespread in white spruce plantations. Middle instars in Carlton and Cook Counties, and later instars in Itasca and Koochiching Counties. (Minn. Pest Rpt.).

SARATOGA SPITTLEBUG (*Aphrophora saratogensis*) WISCONSIN - About 75 percent in third and fourth instars and 25 percent in fifth instar June 28 in Vilas County. Light to heavy on 6,000 acres of red pine plantations in Oneida and Vilas Counties June 30. Fourth and fifth instars dominant at latter site.

WEEVILS - MINNESOTA - *Hylobius radicis* (pine root collar weevil) beginning to pupate in central Pine County. Heavy on Scotch pine in area. (Minn. Pest Rpt.). MICHIGAN - *Pissodes strobi* (white pine weevil) larvae ate back through 1970's growth on infested trees. Drooping leaders apparent throughout Upper Peninsula in open jack pine plantations. (Johnson). DELAWARE - *P. strobi* damage at Hockessin, Castle County. (Boys).

LARGE ASPEN TORTRIX (*Choristoneura conflictana*) WISCONSIN - Defoliated 60 percent of 2,500 acres of quaking aspen in Menominee County by June 14. Pupae dominant at that time. (Wis. Ins. Sur.). MINNESOTA - Egg masses very common in St. Louis, Lake, Cook, and Carlton Counties. Outlook for serious aspen defoliation in 1972. (Minn. Pest Rpt.).

A NOTODONTID MOTH (*Symmerista canicosta*) MICHIGAN - Hatch should be complete soon. (Wallner). Egg survival high, over 95 percent. Preliminary egg surveys indicate more widespread defoliation than in 1970. Average of 19 egg masses per 1,000 leaves. (Eiber).

SADDLED PROMINENT (*Heterocampa guttivitta*) - WEST VIRGINIA - Damage light to sugar maple saplings in Braxton County. Larvae collected at Sutton, by R. D. Whipkey July 7, 1971. Confirmed by A.E. Cole. (W. Va. Ins. Sur.). NEW HAMPSHIRE - Eggs and instars on maple. Larvae 5 per leaf on some trees, possible heavy defoliation at Rumney, Grafton County. (Mason, Hutchins).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - PENNSYLVANIA - Many adults emerged; heavy in several hundred acres at Donegal and Cook township, Westmoreland County, July 1. (Dinsmore).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - SOUTH CAROLINA - Collected on 2 winged elms at Rock Hill, York County. One tree dead and other showed symptoms of Dutch Elm disease. Second case of Dutch Elm disease in State. (Witcher, Fox).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEW MEXICO - Moderately heavy on Siberian elm, but lighter than in previous seasons at Albuquerque, Bernalillo County. (Heninger). COLORADO - Still troublesome on elm at Greeley, Weld County. Controls recommended. (Urano). NEBRASKA - Severe defoliation to American and Siberian elms in several locations. (Hagen, Roselle).

MAN AND ANIMALS

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Ranged 500-1,000 per head on cattle in Woodward County and 300-500 per head in Payne County. Moderate to heavy in Craig, Ottawa, Cleveland, Kingfisher, and Johnston Counties. (Okla. Coop, Sur.). IOWA - Up to 35 (average 13.5) per side on untreated cow herd in Story County July 7. (Iowa Ins. Sur.).

STABLE FLY (*Stomoxys calcitrans*) OKLAHOMA - Averaged 3 per head on untreated dairy cattle in Payne County. Heavy on horses in Garfield County. (Okla. Coop. Sur.). IOWA - Cool, damp weather decreased average of 26.6 per leg June 30 to average of 10.2 per leg (range 0-33) in untreated cow herd in Story County July 7. (Iowa Ins. Sur.). WISCONSIN - Severely annoyed cattle in Calumet County. Moderate in Polk, Chippewa, Rock, Adams, and Walworth Counties. Spraying underway in most areas. (Wis. Ins. Sur.).

FACE FLY (*Musca autumnalis*) - CALIFORNIA - Heavy on livestock at La Honda, San Mateo County. This is a new county record. Collected by J. Linton on July 2. Activity increased from 7-15 up to 25 per face in Marin County. (Cal. Coop. Rpt.). IOWA - Up to 10 (averaged 3.2)per face in untreated cow herd in Story County July 7. (Iowa Ins. Sur.).

MOSQUITOES - MINNESOTA - *Aedes vexans* in 76 percent of 584 larval collections for week ending July 3 made in Metropolitan Mosquito Control District. Of 6,760 females in district's 16 light traps, *A. vexans* constituted 48 percent of catch and *Coquillettidia perturbans* was second at 12 percent. Of 266 mosquitoes in 22 evening bite collections, 164 were *A. vexans*. Of 2,504 mosquitoes in 205 daytime bite collections, 1,200 were *A. vexans*, 312 *A. trivittatus*, 243 *A. fitchii*, 184 *A. stimulans*, 128 *A. sticticus*, 139 *A. excrucians*, and 117 *C. perturbans*. (Minn. Pest Rpt.). WISCONSIN - Continue spotty and confined to wooded lowlands or immediate vicinity. *Aedes cinereus* continues dominant biter with *A. stimulans* secondary. Moderately annoyed cattle in Rock, Chippewa, Calumet, and Polk Counties. (Wis. Ins. Sur.).

BLACK FLIES (*Simulium* spp.) - MAINE - Annoyance by *S. venustum* declining in Penobscot Valley. Most of annoyance from now until October will be due to *S. jenningsi*. (McDaniel).

CATTLE TICKS (*Boophilus* spp.) - TEXAS - Following species identified on bovine during June by county: *B. microplus* (southern cattle tick) Cameron, Hidalgo and Zapata; *B. annulatus* (cattle tick) Maverick. (Anim. Health Div.).

A COMBFOOTED SPIDER (*Latrodectus variolus*) - KENTUCKY - Several specimens taken from dwelling in Bullitt County. (Barnett).

BENEFICIAL INSECTS

LADY BEETLES - KANSAS - Adults, mostly *Hippodamia convergens* (convergent lady beetle), up to 1 per sorghum plant in 3 *Schizaphis graminum* (greenbug) and *Rhopalosiphum maidis* (corn leaf aphid) infested fields in Geary County. *H. tredecimpunctata* and *Coleomegilla maculata* adults seen occasionally. Larvae averaged 0.5-2 per plant and egg masses 0.1-0.5. Larvae of *Scymnus* spp. averaged 0-2 per plant but no adults seen. (Bell). OKLAHOMA - *H. convergens* Adults 3-15 per 10 alfalfa sweeps in Alfalfa, Harper, Ellis, and Woodward Counties. Occasional larva. Adults 0-2 per grain sorghum plant in northwest area with occasional egg mass. (Okla. Coop. Sur.).

A CINNABAR MOTH (Tyria jacobaeae) - WASHINGTON - Moth flight heavy; eggs on tansy ragwort in Clark County. (Shanks).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - OHIO - Leaf damage ranged 0-70 percent in Lorain County with 87 percent of plants sampled showing damage; varied between 0-30 percent in Ashtabula County, with about 16 percent of oat plants sampled showing damage; ranged from 0-70 percent in Trumbull County, with about 25.5 percent of plants sampled showing leaf damage, 1 to 5 percent of plants sampled in Geauga County showing damage. (Andress, Pratt).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - All infestation at Matamoros, Tamaulipas, received third treatment. Mortality checks indicate all infestations eliminated as of July 8. Seventeen infested citrus trees found in northwestern portion of Reynosa; some within 200 feet of U.S.-Mexico border. Surveys in U.S. adjacent to new finds increased. (PPD).

GOLDEN NEMATODE (Heterodera rostochiensis) - NEW YORK - Spring phase of survey in Steuben County and surrounding areas completed July 2-8 all samples negative. No viable cysts found in upstate since October 1968, except on research farm. (PPD).

GRASSHOPPERS - NEVADA - Melanoplus sanguinipes. Mostly adults but in several areas all instars, infesting 5,000-6,000 acres of alfalfa hay and alfalfa hay with grain cover crop in Hualapai Valley, Washoe County. Ranged 3-30 (averaged 10-16) per square yard. (Bechtel, Martinelli). OKLAHOMA - Large area of rangeland in Ellis County controlled. Grasshoppers ranged 10-15 per square yard. Averaged 5 per square yard in Major and Woods Counties. Dominant species Ageneotettix deorum, Amphitornus coloradus, Melanoplus spp., Mermeria sp., and Hesperotettix speciosus. Scattered moderate to heavy infestations in rangeland, Bermuda grass pastures, crop margins, and home gardens from all areas of State. (Okla. Coop. Sur.). KANSAS - Treatment applied in corn and sorghum in Douglas and Washington Counties. Some treating on rangeland in Comanche County. (Bell). NORTH DAKOTA - Damage evident in southeast Cass County. Portions of barley and wheatfields with up to 90 percent of leaves stripped. Up to 8 per square yard in fields; up to 60 per square yard in margins. Melanoplus bivittatus dominant species. Adults present and mating. (Brandvik). IDAHO - Total of 100,800 acres treated during June. Additional treatments planned. (Evans).

A GRASS BUG (Irbisia pacifica) - NEVADA - Heavy and damaging to 10,000 acres of crested wheatgrass in Pine Valley, Eureka County, and at Jiggs, Elko County. Leaf damage severe and potential for severe seed loss throughout entire acreage. (Lauderdale).

GYPSY MOTH (Porthetria dispar) - NEW HAMPSHIRE - Late instars killed by disease near Rochester, Strafford County. (Nehring). RHODE ISLAND - First adults in Providence County. Many complaints on larvae in Providence, Kent, and Washington Counties. Many pupae noted. (Relli, Field). PENNSYLVANIA - Larvae heavy on oaks and maples in 5-acre area at New Tripoli, Lehigh County (no egg cluster in 1970). (Garra, Raub); treated six 40-acre blocks with disparlure to attempt "confustion" of native populations. Infestation light to heavy, and first male caught on July 2. (Cameron).

JAPANESE BEETLE (Popillia japonica) - NEW HAMPSHIRE - First adults at Manchester, Hillsborough County, June 30. (Lafleur). PENNSYLVANIA - Adults in Centre Coonty June 27. (Keim); adults heavy on roses, willows, and sugar maples (average 4 per branch) in Centre County July 7 (Kim). MICHIGAN - First adults in Macomb County July 6. (Moore). OHIO - Damaged grapes at Dundee, Tuscarawas County. (Rings). WEST VIRGINIA - First adults in Mineral County July 4. (W. Va. Ins. Sur.). NORTH - CAROLINA - Usual damage statewide to grapevines, roses, crab apples, and corn ears. (Choate et al). TENNESSEE - Adults trapped in Carter, Hawkins, and Davidson Counties. (Gordon et al.).

HAWAII INSECT REPORT

Turf, Pasture - Adults of a SKIPPER (*Hylephila phylaeus*) light, 6-8 on several Bermuda grass lawns at Halawa, Oahu. (Au).

General Vegetables - All stages of *Liriomyza* spp. (leafminer flies) and *Trialeurodes vaporariorum* (greenhouse whitefly) moderate to heavy in fields of yardlongbeans, tomato, snap beans, and eggplant at Waianae, Waimanalo, and Ewa, Oahu; and at Kapahi, Kauai. (Yamamoto et al.).

Fruits and Nuts - BARNACLE SCALE (*Ceroplastes cirripediformis*) larvae and adults light in 40 acres of passionfruit (*Passiflora edulis*) at Kahului, Maui. About 90 percent parasitized, primarily by *Coccidoxenus mexicanus* (an encyrtid wasp). Adults of *C. mexicanus* moderate. (Miyahira).

Forest and Shade Trees - All stages of CUBAN LAUREL THRIPS (*Cynaikothrips ficorum*) light on 6 Chinese banyan (*Ficus retusa*) trees at Lahaina, Maui. Adults of *Montandoniola moraguesi* (an anthocorid bug), which started activity several weeks ago, helped reduce thrips infestation. (Miyahira). All stages of an APHID (*Pineus pini*) heavy in 15 acres of *Pinus pinaster* at Waikii, Hawaii. Terminal dieback of younger trees readily observed in area. (Yoshioka). KOA HAOLE LOOPER (*Anacamptodes fragilaria*) larvae heavy on foliage of koa haole at Moanalua, Oahu. Random sampling on 5-foot branches revealed 90 percent infestation. (Kashiwai, Matsukado).

Man and Animals - All stages of a DOG FLY (*Musca sorbens*) heavy in dog droppings at Kona, Hawaii. Adults annoying in Kailua and other areas on Oahu. (Ikeda).

Beneficial Insects - ROSY PREDATOR SNAIL (*Euglandina rosea*) adults (20) moderate among populations of GIANT AFRICAN SNAIL (*Achatina fulica*) at University of Hawaii, Oahu. (Olson).

Miscellaneous - Adults of a LYGAEID BUG (*Tempyra biguttula*) adults collected at light at Manele Bay, Lanai, June 1971. This is a new island record previously recorded from Oahu, Kauai, and Niihau. (Gagne).

Weather of the week continued from page 504.

Blythe, California, with afternoon temperatures averaging 111° was one of the hottest places in the Nation. Some cooling occurred over the northern Great Plains at midweek and temperatures remained mostly in 70's Wednesday afternoon. Early morning temperatures ranged from the 40's and 50's over the northern Great Plains to the upper 70's in much of central and eastern Texas. The mercury dropped to 31° at Kalispell and Missoula, Montana, Wednesday morning. A high centered over the Prairie Provinces of Canada brought cooler weather to the Northeast Sunday. Harrisburg, Pennsylvania, registered 89° Saturday but no higher than 60° Sunday afternoon. Temperatures averaged below normal over the Northwest, North Central, and Southeast and warmer than normal over the Southwest, South Central, and Northeast.

LIGHT TRAP COLLECTIONS

BL - blacklight
I - incandescent
MV - mercury vapor
O - other

	Temperature °F	Precipitation (inches)	Type of trap	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Traps
IOWA																								
Dubuque 7/2-7			BL	20			25										7	18	112					
Kanawha 6/27-7/6			BL	59			31										22	19	292					
MINNESOTA																								
Shakopee 6/29-7/5			BL																40					
Worthington 6/29-7/5			BL														1		32					
MISSISSIPPI																								
Stoneville 7/2-8	70-96	0.42	BL	1	2			1		4						1			19			10		
MISSOURI																								
Pemiscot 7/2-8			BL	2						6							21	8	10		3	12		
Platte 7/1-7			BL	9														95	32			38		
NEBRASKA																								
Mead 7/2-8			BL	9			4										4	127	72			1		
NEW HAMPSHIRE																								
Lee 7/5			BL	2										2			1		4					
NEW JERSEY																								
Plainsboro 7/2-6			BL	26											3		1	14	79		2			
Seabrook 7/2-6			BL	20											3		13	31	250			13	2	
NORTH DAKOTA																								
Fargo 7/6-7			BL											1					13					
Sentinel Butte 7/7			BL											4										
OHIO																								
Reynoldsburg 7/1-7			BL	16													4	9	32					
TENNESSEE (County)																								
Fayette 7/5-9			BL	19				7		1							21	8	50			110		
Franklin 7/5-9			BL	9						1					1	2			6			3		
TEXAS																								
Waco 7/2-8	77-101	none	BL	27				65	4	528								3	6	178	22	24	445	
VIRGINIA																								
Holland 6/23-7/6			BL	1					1						2				95			5		
Montgomery 6/25-7/7			BL	31											5	3			124			3		
WISCONSIN																								
Hancock 6/26-7/5			BL	16													6	2	37					
Nenno 6/29-7/6			BL														45		58					

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Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 July 23, 1971 Number 30

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM expected to increase on small grain in eastern South Dakota. CORN LEAF APHID heavy on sorghum in Oklahoma and Indiana. (p. 521). GREENBUG building up on sorghum in South Dakota. Damaged sorghum in Missouri. Economic in sorghum in Kansas. Moderate in Oklahoma. (pp. 521-522).

EUROPEAN CORN BORER heavy in corn in Maryland and Iowa. (pp. 522-523).

PLUM CURCULIO larvae damaged cherries in Michigan. PEARSLUG damaged cherry and pear in Utah. (p. 529).

HORN FLY troublesome to cattle in several States. TABANID FLIES annoying livestock in Utah and New Mexico. (p. 533).

GRASSHOPPERS heavy in grasslands in Wyoming, Washington, Nevada, North Dakota, Nebraska, and Idaho. (p. 534).

Detection

New State records include an ARMORED SCALE from Delaware (p. 532) and a MEMBRACID from Hawaii (p. 536).

For new county and parish records see page 535.

Special Reports

Distribution of Carrot Rust Fly. Map. (p. 538).

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WEATHER OF THE WEEK ENDING JULY 19

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Summer heat continued in the Southwest and southern Great Plains. A cooling trend in the Northeast brought the coolest weather since mid-June. Heavy thundershowers dotted the central Great Plains and Deep South.

PRECIPITATION: An outbreak of severe thunderstorms occurred in the upper Mississippi River Valley during the forenoon and early afternoon, Monday July 12. Winds at Rochester, Minnesota, gusting to 87 m.p.h. blew a school bus off the road and downed trees and power lines. Hail as large as eggs fell in nearby areas. Gusts exceeding 80 m.p.h. destroyed a barn and crushed an airplane at Rice Lake, Wisconsin. Tornadoes occurred at scattered locations in Iowa Monday afternoon and evening. Showers fell in the Southeast from Mississippi to the Carolinas. Showers occurred Tuesday evening in northern Missouri and the lower Ohio River Valley. Light to heavy showers fell over the Southeast the latter part of the week. Meridian, Mississippi, received 4.88 inches of rain late Friday and early Saturday. Saturday brought generous showers to the Missouri River Valley from Yankton, South Dakota, to Columbia, Missouri, to parts of the Ohio River Valley and the Northeast. Most of New Mexico and Texas received no rain. Duststorms occurred in some dry areas.

TEMPERATURE: Cool, comfortable air spilled into the Northern States early in the week. The maximums Monday afternoon ranged from the 70's to the low 80's over the northern border States. The southwestern deserts continued hot with afternoon temperatures of 111° to 116° at many locations. Citizens from eastern Colorado to central Texas roasted in 100° heat. La Junta, Colorado, registered 108° and Garden City, Kansas, 107°. Winslow, Arizona, registered 109° Tuesday afternoon. This is warmest temperature of record at Winslow. The southeast was hot and humid with maximums in the high 80's and 90's. Early morning temperatures were generally in the 40's and 50's over the northern border States and the 70's

Weather of the week continued on page 528.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - SOUTH DAKOTA - Larvae and pupae noted in lodged wheatgrass and alfalfa in northern Sanborn County. Possible buildup in small grain in eastern areas middle to late July. Blacklight trap collections June 28 to July 2 totaled 1,246 moths at Brookings, Brookings County. (Jones). MICHIGAN - Damage spotty in cornfields in Kent County. Only 1 field sprayed. Others beyond point of spraying. (Knisely). NEW YORK - Larvae ranged 5-10 per square yard in spots in orchard grass in Chautauqua County. Infestations reported in no-till corn. (N.Y. Wkly. Rpt., July 12).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Populations heavy in Oconto County area but controls effective. Expect problems caused by rains and winds and heavy populations; average of 2 per sweep in carrots and 1 per head of lettuce. (Wis. Ins. Sur.).

BEET LEAFHOPPER (Circulifer tenellus) - IDAHO - Planned controls cancelled due to cold, wet weather through first week of June. Host plants remained lush and leafhopper migration to cropland light. (Evans). UTAH - Leafhoppers and curly-top disease in tomatoes very light to date (Duncan, Knowlton); curly-top disease 5 percent in Washington County tomatoes (Huber).

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Expected increase occurring in Piedmont and upper Coastal Plain. Counts in 6 cornfields in Johnston County increased from 36 larvae per 50 row feet per field previous week to 158 for current period. Counts remain low (10 larvae per 300 row feet) in Bertie County; however, increase will occur. (Bradley). MARYLAND - Moths ranged 1-4 at blacklight traps near Snow Hill, Worcester County, at Hurlock, Dorchester County, and at Centreville, Queen Annes County. Ear damage remains light, expected to increase. (U. Md., Ent. Dept.). DELAWARE - Second-generation moths light in blacklight traps in Sussex County. (Burbutis). INDIANA - Middle instars occasionally observed in corn whorls over much of State. (Huber). OKLAHOMA - Moderate on sorghum in Murray County. Occasional larva seen in corn in panhandle counties. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Heavy in scattered grain sorghum in Craig and Ottawa Counties. Moderate to heavy in most grain sorghum checked in Beaver, Texas, and Cimarron Counties. Ranged up to 250-400 per plant in many fields; ranged up to 700 per plant in Cimarron County field. Light in corn in panhandle counties, usually on emerging tassels. Ranged 0-100 per plant on grain sorghum in Harmon County. (Okla. Coop. Sur.). KANSAS - Mostly light to moderate in sorghum in northeast and east-central districts. (Bell). NEBRASKA - Counts of 150-500+ per whorl, with most plants infested in Furnas County sorghum field. (Keith, Fisher). NORTH DAKOTA - Colonies averaged 200 per plant on sorghum in Dickey County field. (Brandvik). INDIANA - Percent infestation by district averaged 10.2 (range 0-44) in 9 southwest fields, 16 (range 0-28) in 7 south-central fields, and 10.5 (range 0-24) in 8 southeast district fields. Aphid counts per plant generally small although occasional plants had counts in thousands. Heavy infestations in sorghum reported from various areas of State. (Meyer). KENTUCKY - Adults and nymphs heavy in 45 percent of corn examined in Hickman County; light in Anderson County. Adults and nymphs infested 70 percent of sorghum plants examined in Hickman County. (Barnett).

GREENBUG (Schizaphis graminum) - SOUTH DAKOTA - Building up on grain sorghum in Aurora, Beadle, Bon Homme, Charles Mix, Clay, Davison, Douglas, Gregory, Hutchinson, Moody, and Spink Counties. Heaviest in more southern counties. Some treatments applied in Charles Mix County. In general, populations still below economic numbers. (Kantack). NEBRASKA - Infested about 75 percent of sorghum plants in one Furnas County field. Colonies of 5-115 aphids ranged 0-3 per plant. Little visible damage. (Keith, Fisher). Colonies of 10-15 aphids ranged 1-3 per sorghum plant at Mead, Saunders County. Little evidence of parasitism. (Munson). MISSOURI - Infestations on sorghum throughout northwest area. Ranged 200-3,000+ per plant on sorghum in late boot stage. On early planted sorghum greenbugs discolored first 2-5 leaves; also infested late-planted sorghum. Found from whorl throughout plant. Some controls applied. (Peters). KANSAS - Economic in some sorghum surveyed in Geary, Anderson, Osage, Leavenworth, and Wyandotte Counties. Counts per plant ranged by county (number fields surveyed per county in parentheses): Geary 200-1,250 (3); Wabaunsee 250-300 (2); Johnson 200-1,000 (3); Douglas 200-600 (3); Franklin 200-1,000 (3); Osage 500-1,000 (2); Coffey none (1); Anderson 3,500 (1); Riley 8.5-200 (4); Pottawatomie 10-200 (3); Leavenworth 1,200-2,000 (2); Wyandotte 1,650 (1); Stevens 80 (1); Kearny 0-3 (2); and Wichita, 3-4 (2). In 3 fields in Geary County surveyed last week and again this week, populations (per plant) increased as follows: From 630 to 1,250; from 60 to 950; and from 35 to 200. Parasitism less than 4 percent in these fields. (Bell).

OKLAHOMA - Schizaphis graminum ranged 500-1,000 per plant in scattered grain sorghum in Ottawa County. Averaged 100 per plant in field in Craig County. Ranged up to 250 per plant on grain sorghum in scattered fields in Texas and Cimarron Counties. Heaviest usually in older fields while younger fields seldom averaged more than 100 per plant. Ranged 0-50 per plant in few fields in western Beaver County. (Okla. Coop. Sur.). ARKANSAS - Found in sorghum field in Clay County and in 2 Greene County fields. This is a new county record in Clay County. Infestations light and scattered. (Boyer). MISSISSIPPI - Moderate on sorghum in Leflore County. (Sartor, July 9).

HORNWORMS (Manduca spp.) - MICHIGAN - M. quinquemaculata (tomato hornworm) and M. sexta (tobacco hornworm) collections at all blacklight stations indicate these pests earlier and more abundant than normal. (Newman). MARYLAND - Infestations of M. quinquemaculata and M. sexta ranged 1-5 percent in most tobacco in Charles, Prince Georges, Calvert, and St. Marys Counties. (U. Md., Ent. Dept.). KENTUCKY - M. sexta larvae damaged tobacco in Pulaski County; defoliation 20 percent at one location. Infestation light on tobacco in Trigg County. (Barnett).

POTATO LEAFHOPPER (Empoasca fabae) - VERMONT - Increased on legumes period ending July 13. (Nielsen). MARYLAND - Heavy and spotty, mostly 0-10 per sweep. Heaviest (800 acres) ranged 20-50 per sweep of alfalfa in Baltimore, Harford, Carroll, and Frederick Counties. Some yellowing in heaviest infested fields in Frederick County. Ranged 0-10 per sweep of alfalfa east of Kent County on Eastern Shore. (U. Md., Ent. Dept.). WISCONSIN - Generally light throughout northeastern area and averaged about 3 per sweep in central area. (Wis. Ins. Sur.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Tobacco plants infested with second and third instars ranged 1-4 percent in many areas of St. Marys, Calvert, Anne Arundel, and Prince Georges Counties. (U. Md., Ent. Dept.). TENNESSEE - Very light in tobacco areas surveyed in Robertson and Greene Counties. Parasitism heavy. (Pless, Eisler).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Spot checks in 23 fields of sweet and field corn (silking stage or beyond) in Nash, Wilson, Edgecombe, Martin, and Bertie Counties indicate about 2 percent infestation by first generation. Second-generation larvae appearing; however, little loss expected. (Hunt). KENTUCKY - Larvae damaged corn in Trigg County; infestation 10-30 percent. (Barnett). MARYLAND - First-brood larvae continue to pupate throughout Eastern Shore. No pupation west of Chesapeake Bay. Infested stalks throughout State ranged 0-10 percent depending on age of corn. Heavy in all areas of State. (U. Md., Ent. Dept.). DELAWARE - Adults averaged 19 per night in blacklight traps. Infestations averaged 10 percent in field corn in New Castle County, most in third and fourth instar. Eggs in Sussex County on peppers. (Burbutis). OHIO - Borers infested 10-75 percent of corn plants in Tuscarawas County. (Veley). Larvae beginning to burrow into tassels and stalks. Spraying at this time no longer effective. (Andress). MICHIGAN - First-generation adult emergence complete at all blacklight stations. Counts dropped to 2 moths at Lenawee County station. Larval activity persists with most boring into host plants. Potatofields in Monroe County showed light infestation by third instars in lateral shoots. (Newman). Found in field corn, especially in central areas. Most larvae in whorls or in stalks. Some pupation. New adults will emerge next 14-21 days. Heavy and spotty in field corn in Kent County (Knisely) and Shiawassee County (Austin), (Sauer). INDIANA - About 50 percent of fields usually visited during fall corn insect survey in southern area examined for first-generation Ostrinia nubilalis infestations. Percent infestation as follows: Southwest - 12.4 (range 0-36) in 9 fields with average of 9 (range 0-16) larvae per 100 stalks; south-central - 6.8 (range 0-20) in 7 fields with average of 8.6 (range 0-28) larvae per 100 stalks; southeast - 7.5 (range 0-24) in 8 fields with average of 5.5 (range 0-20) larvae per 100 stalks. More than 2 larvae in single stalk observed only once; all ages of larvae frequently found in single fields. (Meyer). WISCONSIN - Blacklight trap collections light at all reporting sites. Larvae in all stages of development. Surveys showed 80 percent infestation near Endeavor, 32 percent at Westfield, 32 percent at Weyauwega, 56 percent at Hancock, 1 percent at Hortonville, 1 percent at Green Bay, 48 percent at West Salem, 40 percent at Eau Claire, 10-70 percent in Dodge County, and up to 100 percent at some sites in Trempealeau and Adams Counties. (Wis. Ins. Sur.). MINNESOTA - Average number infested plants (average number of borers) per 100 plants by district: Southwest 36 (72), west-central 61 (204), central 55 (161), east-central 17 (41). (Minn. Pest Rpt.).

NORTH DAKOTA - O. nubilalis light in southeast grain corn producing counties. Shotholing in 50 percent of fields checked in Richland, Dickey, and Barnes Counties; 0-25 percent of plants infested. Egg masses still in Richland County. Most borers in second instar. (Brandvik). SOUTH DAKOTA - Continues to infest corn in eastern areas. Adults abundant and oviposition noted in northern Moody County and into Brookings County. Infestations of 100 percent in some fields in Sanborn and Beadle Counties. Mostly in whorls. In heavily infested counties, infestations 100 percent in some grain sorghum. Borers in sorghum not expected to survive. (Jones, July 9). IOWA - First-brood survey completed in 32 randomly selected cornfields in Boone County July 12-13. In each field, 26 plants dissected. Borers 62 per 100 plants with 63 percent of plants infested. Survey showed 10,813 borers per acre which compares to 3,271 per acre in 1970. (Iowa Ins. Sur.). NEBRASKA - Infested plants ranged 34-49 percent with 0-3 third to fifth instars per plant in 4 Furnas County fields. (Keith). First generation beginning to pupate at Mead, Saunders County (Munson). MISSOURI - Last instars, pupae, adults, and eggs found in northern areas. Moth flights probably at peak in southeast area. (Houser). KANSAS - Recent blacklight trap catches indicate first-generation moths emerging in Brown and Riley Counties. (Bell).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - COLORADO - Pupation about 30 percent and some adult emergence in Logan County. (Donahue, Hantsbarger). OKLAHOMA - Adult emergence light in cornfields in Texas and Beaver Counties. (Okla. Coop. Sur.). MISSOURI - Adults averaged 1 per plant in several fields in northeast area. Averaged 5 in severly lodged cornfield in north-central area. (Munson). NEBRASKA - Pupation 50-75 percent and adult emergence 15-25 percent in Saunders County. Adults average about 4 per corn plant, mostly males. (Munson).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - TENNESSEE - Adults averaged 6 per ear of early planted corn in Weakley County. This is a new county record. (Pless, Eisler). INDIANA - Adults (counts usually very low) present in occasional field of corn in southwest, south-central, and southeast districts. Averaged 4 per plant in field beginning to silk in Hamilton County. (Meyer).

CORN ROOTWORMS (Diabrotica spp.) - OHIO - Larvae peaked this period. Adults of D. longicornis (northern corn rootworm) and D. undecimpunctata howardi (southern corn rootworm) appearing. (Musick). SOUTH DAKOTA - Diabrotica spp. larvae severely damaged corn in Freeman area of Hutchinson County; some damage in fields treated at planting time. Larvae damaged corn near Renner, Corson, and Garretson in Minnehaha County. Damage to corn in these localities attributed to low degree of control from misapplication of insecticides at planting time. Damage heavy in Moody County. Heavy in 45-acre field of untreated corn. In same area, heavy in 15 acres of corn planted previously in Sudan grass in 1970. (Kantack).

CORN FLEA BEETLE (Chaetocnema pulicaria) - OHIO - Adults averaged 5 per plant in Union County; less than 2 percent of leaf area showed signs of damage. (Andress). MARYLAND - Light to moderate in Baltimore, Carroll, Frederick, and Montgomery Counties. Infestation ranged 8-65 percent (2,000 acres) in these counties. Populations east of Chesapeake Bay light with damage below 5 percent in most fields. (U. Md., Ent. Dept.).

DUSKY SAP BEETLE (Carpophilus lugubris) - MARYLAND - Heavy but spotty in 600 acres of sweet corn in Queen Annes, Kent, Talbot, and Dorchester Counties. Damaged ears ranged 50-100 percent. (U. Md., Ent. Dept.).

FALL ARMYWORM (Spodoptera frugiperda) - COLORADO - Damage heavy to corn in La Plata County. Controls applied. (Lorenz, Hantsbarger).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - SOUTH CAROLINA - Heavy on late sorghum plantings in Chesterfield County and in few other areas. (Nettles).

SORGHUM MIDGE (Contarinia sorghicola) - ARKANSAS - Populations light in 9 of 48 fields in northeast areas. Watch fields yet to bloom. Populations not expected to increase soon. No important increase in southwest and east-central areas. (Boyer). MISSISSIPPI - Damage light to early planted grain sorghum in Quitman, Copiah, and Jasper Counties. (Sartor).

BANKS GRASS MITE (Oligonychus pratensis) - OKLAHOMA - Moderate (2-4 leaves infested) in corn in Texas County. Light (1 or 2 leaves infested) in western Beaver County. Moderate in few fields of grain sorghum in Cimarron and northwest Texas Counties. (Okla. Coop. Sur.).

YELLOW SUGARCANE APHID (Sipha flava) - ARKANSAS - Light in sorghum fields in Clay County and in Greene County. These are new county records. (Boyer).

TURF, PASTURES, RANGELAND

GREEN JUNE BEETLE (Cotinis nitida) - TENNESSEE - Adults heavy in southern counties of western area. No damage to date; population indicates damage might occur in pastures and hayfields later. (Gordon).

A WEEVIL (Mecinus pyraster) - VIRGINIA - Single adult collected in Montgomery County on March 10, 1971, by R.H. Perry. Determined by R.E. Warner. This is a new county record. (Allen).

FALSE CHINCH BUG (Nysius ericae) - KANSAS - Adults averaged 20 per square foot in bentgrass on golf green near Manhattan, Riley County. (Bell).

CHINCH BUG (Blissus leucopterus leucopterus) - KANSAS - Adults average 5 per square foot in bentgrass golf green near Manhattan, Riley County. (Bell).

A PSYCHID MOTH (Apterona crenulella) - OREGON - Single specimen taken in alfalfa at Long Creek, Grant County, July 8. This is a new county record. Also recorded from Baker County. (Brown, Penrose).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - UTAH - Damaged first-crop alfalfa in Piute County and Hanksville area of Wayne County. (Chapman). WYOMING - Larvae ranged 90-500 (averaged 256) per 10 sweeps of alfalfa in 2 Park County fields. (Parshall). COLORADO - Some adults still evident in Delta County and larvae light, ranged 2-10 per 100 sweeps, in Western Slope areas. (Soderquist, Bulla). NEW MEXICO - Light in alfalfa checked near Espanola, Rio Arriba County; averaged 0-1 adult and 2-3 larvae per 25 sweeps. (Heninger). NEBRASKA - Adults severely retarded growth after cutting in Lincoln County field. (Campbell). WISCONSIN - Larvae still light in alfalfa in southern areas. (Wis. Ins. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Adults and nymphs ranged 3-15 per 25 sweeps in Espanola area, Rio Arriba County. (Heninger). WYOMING - Ranged 16-40 (averaged 30) per 10 sweeps in 2 Park County fields. (Parshall). MASSACHUSETTS - L. lineolaris (tarnished plant bug) adults 121 per 100 sweeps of alfalfa in Hampshire County field. (Miller).

MEADOW SPITTLEBUG (Philaenus spumarius) - MASSACHUSETTS - Adults 181 per 100 sweeps of alfalfa in Hampshire County field. (Miller).

PEA APHID (Acyrthosiphon pisum) - NEW MEXICO - Continues light in Rio Arriba County alfalfa. (Heninger). WYOMING - Ranged 100-200 (averaged 140) per 10 sweeps in 2 Park County fields. (Parshall). COLORADO - Increased, ranged 500-2,000 per 100 sweeps, on second cutting of alfalfa in Western Slope areas. (Bulla).

GRASSHOPPERS - MINNESOTA - No serious problems observed in alfalfa or clover. Roadside counts ranged 10-20 per square yard in scattered locations in Cottonwood, Redwood, Renville, Kandiyohi, Big Stone, and Wright Counties. Very little movement into adjacent crops. (Minn. Pest Rpt.). MICHIGAN - Melanoplus femurrubrum and M. bivittatus abundant in Kalamazoo County alfalfa, roadside weeds, and grasses, but not yet in corn. (Connin). May move into corn and other crops now that alfalfa cut. If dry weather continues, expect trouble. Mostly nymphs, with only few adults. (Ruppel). KENTUCKY - Grasshopper nymphs and adults averaged 830 per 100 sweeps in red clover in Carlisle County. (Barnett).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - INDIANA - Counts indicate controls warranted in Dearborn, Ripley, Jefferson, Decatur, and Johnson Counties. Numbers usually not economic in Decatur and Johnson Counties. (Sanders). Also more numerous than usual in gardens and other legumes. (Huber).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Infestations averaged 4 percent in peanuts in Love County. (Okla. Coop. Sur.).

THRIPS (Frankliniella spp.) - NORTH CAROLINA - Heavier than normal in Bladen County area. Growers in nearby counties should watch peanuts very closely for stunting and deformation of leaves. (Cullipher).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, weevils still light. Punctured squares averaged 4.9 (maximum 6.4) percent in 6 treated fields; averaged 4.9 (maximum 39.3) percent in 46 untreated fields. (Cowan et al.). OKLAHOMA - Moderate in Bryan County, except few fields which ranged 60-100 percent infested. Light to moderate in Garvin County. Averaged 1 percent in Tillman County. (Okla. Coop. Sur.). LOUISIANA - Total of 78 weevils taken from 210 traps week ending July 8 in Madison Parish. Currently, weevils total 83 from 211 traps; total to date 5,012. (Cleveland et al.). ARKANSAS - Increased. Of 8,292 fields surveyed, 3,683 infested. Control needed in 80. (Boyer et al.). TENNESSEE - Increased in regularly infested portion of cotton-growing area. Punctured squares ranged 1-20 percent in infested fields. Week starting July 19 critical period as first-generation weevils will be emerging. Infestations expected to increase sharply. Populations still much heavier in older cotton. Some infestations well above control levels. (Locke). First-generation weevils observed in Mississippi River bottom of Tipton County. (Gordon). NORTH CAROLINA - Total of 2,000+ hibernating adults taken in 90 sexlure traps in Northampton County for 1971. This much heavier than 1970 catch. However, comparison will not indicate differences between years since improved sex attractant not used in 1970. (Threatt). SOUTH CAROLINA - In Florence County weevils zero on wing traps and live traps. First-generation weevils increasing. (Taft et al.). GEORGIA - Punctured squares ranged 0-59 percent in southern areas period ending July 10. (Womack). ALABAMA - Weevils heavy in most fields in central and southern areas. Percent damaged squares ranged 15-80 (averaged 35-55) in many fields. Unfavorable weather interferred with routine control. Second and overlapping generations now starting in extreme south areas and continuing up through central areas. "Hatch out" of first-generation weevils occurred in extreme north areas. Damaged squares remain below 10 percent in larger fields, many small fields had 15-35 percent of squares punctured. Some controls applied. (McQueen). MISSISSIPPI - Average infestations ranged 1-52 percent in 17 counties surveyed. (Sartor). In delta counties, punctured squares averaged 2.23 percent in 15 of 30 fields. In pheromone-baited wing traps collected 4 weevils in Washington County and 4 in Bolivar County. (Pfrimmer et al.).

BOLLWORMS (Heliothis spp.) - NEW MEXICO - Fields from Dona Ana to La Union in Dona Ana County had H. zea eggs on almost 100 percent of plants checked. (N.M. Coop. Rpt.). TEXAS - In McLennan and Falls Counties, moth collections to date exceed total for 1970. Eggs averaged 4.4, larvae 1 per 100 terminals in 6 treated fields; eggs averaged 15.1, larvae 3.1 in 45 untreated fields. Of 20 larvae collected from cotton, 4 identified H. virescens. (Cowan et al.). LOUISIANA - No larvae found in plots examined in Madison Parish week ending July 8. Eggs ranged 65-390 per acre in 21 of 59 fields. This period eggs ranged 65-260 per acre in 14 of 36 plots checked. (Cleveland et al.). ARKANSAS - H. zea moths on sugarlines (0.5 mile of row per crop). Totals by county on cotton and soybeans: June 30 to July 12, Phillips 69; July 7-8 Lonoke 233; June 29 to July 13, Lafayette 1,180; July 7-12, Lee 596. Infestations in 2,727 fields out of 8,292 checked, treatments needed in 16. (Boyer et al.). TENNESSEE - H. zea eggs and larvae ranged 1-9 per 100 terminals. This is increase. Eggs still found in terminals with exception of few found on squares. (Locke). MISSISSIPPI - Average infestations ranged 1-5 percent in 14 counties surveyed. (Sartor). In delta counties, moth flights increased. Damaged squares averaged 2.53 (maximum 6.5) percent in 15 of 30 fields. (Pfrimmer et al.). ALABAMA - Egg laying increased in all areas. Controls underway in most fields in south and central areas. Heavy in few fields in Macon, Montgomery, and Greene Counties. Beneficial insects controlling larvae in most northern area fields. (McQueen). GEORGIA - Eggs ranged 0-33 and larvae 0-13 per 100 terminals; square damage heavy in several southern area fields week ending July 10. (Womack). SOUTH CAROLINA - In Florence County, recovered 12 H. zea and no H. virescens in light traps. Generally field infestations light. (Taft et al.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae ranged 1-5 per plant on leaves, blooms, and squares in Cochise County. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - OKLAHOMA - Heavy in young cotton in Tipton area, Tillman County, and moderate in Bryan County. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - TENNESSEE - Continues to cause some injury to pinhead squares in west areas. (Locke). At or above control levels in Mississippi River bottom of Tipton County. Controls applied. (Gordon).

TOBACCO

BLACK CUTWORM (Agrotis ipsilon) - MARYLAND - Last instars infested 5 percent of 5 acres of tobacco near Oakley, St. Marys County. (U. Md., Ent. Dept.).

SUGAR BEETS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - WYOMING - Maggots abundant in untreated sugar beet fields in Park and Washakie Counties. Maggots per plant ranged 0-83 (field averages 9-69). Dead seedlings ranged from less than 5 to 30 percent. Last instars few, some early instars noted. (Parshall).

SPINACH LEAFMINER (Pegomya hyoscyami) - UTAH - Damage moderate to sugar beet foliage in Hyrum, Cache County. (Knowlton).

AN APHID (Myzocallis robiniae) - WASHINGTON - Alatae migrating, particularly abundant on sugar beet plants at Yakima, Yakima County. No apparent damage; suspected of spread of virus yellows. (Landis).

MISCELLANEOUS FIELD CROPS

A FLEA BEETLE (Longitarsus waterhousei) - IDAHO - Damage serious in 7-acre field of mint at Nampa, Canyon County. Adjoining 14-acre field partially damaged. (Homan).

PAINTED LADY (Vanessa cardui) - SOUTH DAKOTA - Larvae damaged sunflower in experimental planting near Brookings, Brookings County. (Kantack).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Remains serious in northern area gardens. Commercial control required on larger fields of potatoes. This one of worst years observed on potatoes and tomatoes. (Knowlton). Common in Davis County during period ending July 9. (Burningham). COLORADO - Larvae evident on potatoes in Gilcrest and Platteville areas of Weld County. Controls planned. (Urano). NEW YORK - Abundant on potatoes and tomatoes in Erie County. (N.Y. Wkly. Rpt., July 12). RHODE ISLAND - Infested potatoes Statewide; infested tomatoes in Providence County. (King, Field).

EUROPEAN CORN BORER (Ostrinia nubilalis) - WISCONSIN - Larvae abundant in some potatofields in central area, killing some stalks. Pupae in some fields. (Wis. Ins. Sur.).

POTATO TUBERWORM (Phthorimaea operculella) - MICHIGAN - Surveys negative in several Monroe County fields. (Kidd).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Controls needed in many commercial fields from Utah County north; serious in many home gardens. (Duncan, Knowlton). COLORADO - Adults appearing in pinto beans in Montrose and Delta Counties; some controls applied. Few eggs or larvae noted. (Bulla). Eggs hatched in many areas of Weld County; controls applied in Kersey area. (Urano). TENNESSEE - Continues to damage green beans in all areas. Damage heavy in some areas where weather conditions prevented proper insecticide application. (Gordon).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Adults heavy in field peas in Cotton County. (Okla. Coop. Sur.).

PEA LEAF WEEVIL (Sitona lineatus) - IDAHO - Emerging adults ranged 2-20 per square foot on soil. Pupae ranged 3-6 per 0.25 square foot of soil dug about pea plant roots. Occasional full-grown larva and adult found in soil samples from peafields in Viola area, Latah County. (Futter et al.).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - IDAHO - First moth of season collected July 5, three miles east of Twin Falls in one of several blacklight traps operated throughout Magic Valley. (Peay). Moths collected at experiment station, Kimberly, Twin Falls County, July 13. (Antonelli).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - First adult collected at Ottawa County blacklight station July 11. (Newman). WISCONSIN - Few half-grown larvae feeding in commercial field of cabbage in Outagamie County. (Wis. Ins. Sur.).

SPOTTED CUTWORM (Amathes c-nigrum) - MICHIGAN - Collections steadily increasing at all stations. Increase could indicate serious trouble in 1972 spring plantings. (Newman).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - WISCONSIN - Heavier than normal in cucumbers in northeast where considerable damage occurred earlier. Reports indicate this species and Diabrotica undecimpunctata howardi (spotted cucumber beetle) prevalent in other parts of State. (Wis. Ins. Sur.).

CARMINE SPIDER MITE (Tetranychus cinnabarinus) - ARIZONA - One cantaloup field at Yuma treated in Yuma County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata undecimpunctata) - OREGON - Larvae damaged table beets in 65-acre commercial planting near Independence, Polk County. Damage limited to small swales and low spots in field. Most in last instar or pupal stage. (Ammon, Crowell).

ONION THRIPS (Thrips tabaci) - COLORADO - Increased, ranged 10-20 per onion plant in some Western Slope fields; controls applied. (Bulla). Infested onions in Larimer County. (Ellis).

Weather continued from page 520.

across the South, except the southwestern deserts where the mercury remained in the 80's. Phoenix, Arizona, registered 87° several mornings early in the week. Hot weather spread northward as the week progressed. Western Kansas and southwestern Nebraska suffered 100° heat Saturday afternoon. Hill City, Kansas, registered 104° and Wichita Falls, Texas, 107° on that date. Dickinson, North Dakota recorded 96° Saturday afternoon. Temperatures averaged above normal southwest of a line from northern Idaho to Georgia and below normal northeast of that line. Reno, Nevada, averaged 9° warmer than normal. Some areas of the North Central and Northeast averaged several degrees cooler than normal.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1971

The National Weather Service's 30-day outlook for mid-July to mid-August is for temperatures to average above seasonal normals in the Gulf and South Atlantic Coast States and over the western half of the Nation except for near to below normal along the central and south Pacific coast. Below normal averages are indicated for the northeast quarter of the Nation and the Rio Grande Valley. Elsewhere near normal temperatures are in prospect. Rainfall is expected to exceed normal over the upper and middle Mississippi Valley, the Great Lakes, northern New England, and portions of the central intermountain region. Subnormal amounts are indicated for most of the Pacific coast, the northern intermountain region, the northern Plains, and the southern Plains. In unspecified areas near normal rainfall is expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - WASHINGTON - On apple near Yakima, Yakima County. First-brood entries still occurring; overlap of first and second broods likely. Second-brood moths expected about July 15 in earliest areas. Estimated damage 50 percent on unsprayed trees. (Johnson). CALIFORNIA - Second-generation moth populations of concern to walnut growers in San Benito County. Bio-control about eliminated aphid populations on walnuts. Without aphid treatments, L. pomonella may require separate treatment. (Cal. Coop. Rpt.). UTAH - Moderate in Salt Lake, Davis, and Washington County orchards during period ending July 9. (Burningham, Huber). COLORADO - Second-brood moths taken in attractant traps in most of Western Slope areas; counts variable. (Bulla). MASSACHUSETTS - Larvae very active in unsprayed and poorly sprayed apple orchards in Hampshire, Hampden, Worcester, and Middlesex Counties. (Wilder, Jensen).

PLUM CURCULIO (Conotrachelus nenuphur) - MICHIGAN - Unusual number of larvae and uncommon amount of damage noted in harvested cherries. Apparently due to poor spray timing or controls used. (Thompson).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - WASHINGTON - First-generation crawlers still emerging on peach, 30 days after first crawlers seen. (Johnson).

PEACH TWIG BORER (Anarsia lineatella) - WASHINGTON - On peach trees near Yakima, Yakima County. First summer generation shoot strikes noted July 7. (Johnson).

TARNISHED PLANT BUG (Lygus lineolaris) - MASSACHUSETTS - Causing much damage to peaches statewide. (Jensen).

PEAR PSYLLA (Psylla pyricola) - UTAH - Collected in Salt Lake County during period ending July 9. This is a new county record. (Davis, Burningham). MICHIGAN - Eggs, nymphs, and adults from overlapping summer generations making effective control difficult. (Thompson). CONNECTICUT - Difficult to control on pears in Glastonbury area. (Savos, Kollas).

PEARSLUG (Caliroa cerasi) - UTAH - Damage moderate to cherry and pear foliage in some Salt Lake and Davis County orchards (Burnigham) and severe in some Weber, Cache, and northern Davis County cherry orchards (Davis).

CHERRY FRUIT FLY (Rhagoletis cingulata) MICHIGAN - Emergence complete in southwest counties. Adults still numerous in traps north of Oceana County. (Thompson). First larvae collected July 13 in Manistee and Oceana Counties. Recovered from tart cherry samples at Hart. (Hanna).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Adults reported in two locations in Lake Minnetonka area and at New Ulm. Only single specimens taken. (Minn. Ins. Rpt.). WISCONSIN - Adult activity increased but still later and less intense than in 1970. (Wis. Ins. Sur.). MICHIGAN - Light, erratic, and unpredictable throughout much of State. Emergence about 2-3 weeks behind schedule for southern counties; probably affected by recent drought. First flies trapped in Allegan and Kalamazoo Counties July 12. (Thompson). MASSACHUSETTS - Adult emergence increasing rapidly statewide. (Jensen). CONNECTICUT - Adult emergence increased rapidly; collections on false apple lures reported from Glastonbury, Bethel, New Haven, and Storrs. (Savos, Kollas).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MASSACHUSETTS - Causing some problems in apple orchards in Worcester and Middlesex Counties. (Jensen). COLORADO - Building up in apple orchards in Mesa, Delta, and Montrose Counties. Range 2-10 per leaf, mainly in centers of trees. Miticide recommended in third cover spray. (Bulla). Heavy in several peach orchards of Vineland area in Mesa County. (Sisson).

FALL WEBWORM (Hyphantria cunea) - NORTH CAROLINA - Damaging over State. Second to fourth instars infesting 30+ percent of pecans in Jones and Craven County area. Webs observed on 1-5 limbs per tree. (Hunt). SOUTH CAROLINA - Light on pecans in

Orangeburg County. First report of season on pecans. (Langford). ALABAMA - Heavy in pecan trees in Elmore County for this time of year. Populations heavy in this area in 1970. (Morris et al). OKLAHOMA - Completely defoliated persimmon trees in many areas of Seminole, Okfuskee, and Okmulgee Counties. Moderate to heavy on pecan trees in eastern half of State. (Okla. Coop. Sur.). TEXAS - Infestations reported from Gonzales, Guadalupe, Lee, and other counties in southern and coastal areas. Second-generation reported from Gonzales County. Generally light in Brazos, Burleson, Grimes, Waller, Fort Bend, and Brazoria Counties. (Cole, Green).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Heavy on pecans in Ottawa County. (Okla. Coop. Sur.). MISSOURI - Larvae defoliated walnut in several locations in southwest area. (Francka).

FILBERTWORM (Melissopus latiferreanus) - OREGON - Three adults taken in blacklight trap at Eugene, Lane County, July 12. First seen in area this year. (Tinker).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Second-generation activity decreased in south-central and coastal areas. Light on pecans at Kermit, Winkler County. Second-generation in northern area and Rolling Plains. (Cole et al).

APHIDS - OKLAHOMA - Monellia costalis (blackmargined aphid) building up on pecans in Lincoln County; ranged 1-15 per leaflet. Much honeydew produced. (Okla. Coop. Sur.). TEXAS - Tinocallis caryaefoliae (black pecan aphid) activity increased in Pecos, Ward, and Reeves Counties. Light on pecans in Brazos County. Infestations detected in Guadalupe County. (Cole et al).

CITRUS

Quarterly Citrus Insect and Mite Outlook in Florida - July through September - This Outlook is based on the assumption that weather beyond the period of the current National Weather Service 30-day Outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect and Disease Summary" usually released twice each month.

CITRUS RUST MITE (Phyllocoptruta oleivora) increase will continue through July, hold at high level through August, and decrease in September. Heavy infestations expected in 30 percent of groves. CITRUS RED MITE (Panonychus citri) and TEXAS CITRUS MITE (Eutetranychus banksi) will recede from their abnormally high levels during July and August and be at low levels by September. Only scattered groves will have important infestations. GLOVER SCALE (Lepidosaphes gloverii) will continue high through July, gradually decrease in August, and be at low to moderate level by September. PURPLE SCALE (L. beckii), CHAFF SCALE (Parlatoria pergandii), and YELLOW SCALE (Aonidiella citrina) populations will remain below normal and at low level. BLACK SCALE (Saissetia oleae) expected to increase during July, continue briefly in high range during August, and drop to moderate level by September. Only scattered groves will have important infestations. An ARMORED SCALE (Unaspis citri) expected to spread and intensify during July and September. Although infestations will be spotty, statewide population expected to be greater than in any prior period. MEALYBUGS expected to enter high range briefly in July, then gradually decrease. Population at summer peak will be below normal. WHITEFLY populations predicted to be near normal and mostly at moderate level. Decrease expected in August followed by an upward trend in late September. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

A FRUIT FLY (Anastrepha nigrifascia) - FLORIDA - During May, numerous adults taken at Key West and several of Lower Keys. These flies taken in McPhail traps hanging in variety of fruit trees located on Ramrod Key, Sugar Loaf Key, Big Coppitt Key, Big Pine Key, and Middle Torch Key. Stone (1942) gave distribution as Florida Keys from Key Largo to Key West, and listed food plants as "Mimusops emarginata and Achras zapota." (Fla. Coop. Sur.).

SMALL FRUITS

OBSCURE ROOT WEEVIL (Sciopithes obscurus) - WASHINGTON - Adults infested 10 acres of raspberries near Vancouver, Clark County; contaminated harvested berries. (Shanks).

GRAPE BERRY MOTH (Paralobesia viteana) - UTAH - Larvae in some grapes in "Dixie" area of Washington County, but still light. (Huber).

WESTERN GRAPE LEAF SKELETONIZER (Harrisonia brillians) - UTAH - Damaged foliage in vineyards throughout "Dixie" area of Washington County. (Huber, Knowlton).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - CALIFORNIA - Heavy on bushberries in Fresno County, caused some loss as thrips caused rejection of berries at processing plants. Late infestations caused treatment or harvest problems. (Cal. Coop. Rpt.).

ORNAMENTALS

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - IDAHO - Infesting 30 percent of Douglas-fir Christmas tree planting at Bonners Ferry, Boundary County. (Studer).

HOLLYHOCK WEEVIL (Apion longirostre) - MISSOURI - Adults collected in Dade County by J.E. Francka and in Jackson County by L.P. Burgess. These are new county records. (Munson). KANSAS - Found on hollyhock in Neosho, Montgomery, Allen, Wilson, Anderson, Cheyenne, Sherman, and Ford Counties. Determinations by K.O. Bell, W. Iselin, and E. Martinez. These are new county records. (Bell).

A PSYCHID MOTH (Apterona crenulella) - NEVADA - Collected on hollyhock and other ornamentals at Austin, Lander County, for a new county record. (Bechtel, Martinelli). Larvae heavy in home vegetable gardens at Elko, Elko County. (Stonier).

A NOCTUID MOTH (Catabena esula) - NEVADA - Larvae and damage heavy on lantana at Las Vegas, Clark County. (Williams).

FOREST AND SHADE TREES

FALL WEBWORM (Hyphantria cunea) - MARYLAND - Populations heaviest within past 3 years statewide. Heavy infestations remain spotty but nests conspicuous. (U. Md., Ent. Dept.). MINNESOTA - Early instars scattered on American elm, apple, and alder in southwestern St. Louis and northern Aitkin Counties. (Minn. Pest Rpt.).

WESTERN TENT CATERPILLAR (Malacosoma californicum ssp.) - OREGON - New male, first of season, at white light in West Salem, Polk County, July 13. Several new adults taken in blacklight trap at Hermiston, Umatilla County, July 12. Population in northwestern area appears light. (Larson, Westcott).

YELLOWNECKED CATERPILLAR (Datana ministra) - TENNESSEE - Damage heavy to oak trees locally in central and western areas. (Gordon).

A NOTODONTID MOTH (Symmerista canicosta) - MICHIGAN - Larvae mostly first instar; second instars 9-30 percent of population. Some eggs still unhatched. (Waller, Eiber). Larvae heavy in Muskegon County. Reports indicate defoliation will be more severe than during 1970. (Sauer).

A NOCTUID MOTH (Melipotis indomita) - TEXAS - Heavy larval populations damaged foliage of mesquite trees throughout large areas this year. Larvae detected in Nolan, Jones, Shackelford, Stephens, Throckmorton, Wilbarger, and Hardeman Counties in Rolling Plains; detected in Crosby County in South Plains. Infestations noted in Brazos, Burleson, Robertson, and Eastman Counties. (Boring, Green),

ELM LEAF BEETLE (Pyrrhalta luteola) - ALABAMA - Second-generation larvae seriously damaged many elms along streets and on lawns in northern areas. (Magnusson et al.). TEXAS - Damage reported moderate to heavy to Chinese elms in Reagan County. (Neeb). NEW MEXICO - Widespread damage noted in cities and villages throughout Rio Arriba County. (Heninger). UTAH - Damaging at Delta, Millard County (Davis), Orangeville, Emery County (Roberts), and some areas of Salt Lake, Weber, and Cache Counties (Knowlton).

AN ARMORED SCALE (Lopholeucaspis japonica) - DELAWARE - Collected on Japanese red maple at Wilmington, New Castle County, May 26, 1971. Collected and determined by D.F. Bray. This is a new State record. (Burbutis).

REDHEADED PINE SAWFLY (Neodiprion lecontei) - SOUTH DAKOTA - Larvae defoliated young pines in section of planting near Rosebud, Todd County. Controls applied. (Kantack). RHODE ISLAND - Damaging pines in nursery in Bristol County. (Relli).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 13 cases reported in U.S. July 4-10 as follows: TEXAS - Dimmit 1, Menard 1, Starr 2, Bowie 6, Jim Wells 1, Refugio 1; ARIZONA - Pima 1. Total of 96 cases reported in portion of Barrier Zone in Republic of Mexico. During period July 11-17, total of 8 cases reported in U.S. as follows: TEXAS - Bowie 6 Kimble 1; ARIZONA - Santa Cruz 1. During same period, 138 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 15, Chihuahua 41, Coahuila 12, Nuevo Leon 14, Tamaulipas 56. Total of 43 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 51,238,000; Arkansas 3,110,000; Arizona 4,190,000; Oklahoma 150,000; Mexico 84,930,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - VERMONT - Increasing problem with hot, dry weather in Champlain Valley. (Nielsen, July 13). MARYLAND - Ranged 2-10 per head of dairy cattle near Centreville, Queen Annes County. Ranged 3-5 per head on dairy stock in Hillsboro area of Caroline County. These are new county records. Ranged 5-50 per head on unsprayed dairy stock in Frederick, Carroll, Montgomery, and Baltimore Counties. Counts on sprayed cattle in same areas ranged 0-10 per head. (U. Md., Ent. Dept.). OHIO - Adults ranged 30-55 per head on cattle in Noble County. (Pratt). ILLINOIS - Averaged 30 per animal on pastured cattle statewide. (Ill. Ins. Rpt.). IOWA - Ranged 2-35 (average 9.2) per face on untreated cow herd in Story County. (Iowa Ins. Sur.). NEBRASKA - Averaged 10 per face on Platte River Valley and canyon area herds. (Campbell). UTAH - Troublesome about many Juab County farms (Esplin), and to horses and cattle in Davis, Weber, Box Elder, and Cache Counties (Knowlton). IDAHO - Adults ranged 3-25 per face on pastured cattle in many northern areas; herd averages of 18 per animal observed past 2 weeks. (O'Keeffe).

HOUSE FLY (Musca domestica) - WISCONSIN - Generally heavy statewide; moderate to severe problems reported in dairy barns in all areas. Very heavy on few farms where no chemical controls applied. (Wis. Ins. Sur.).

MOSQUITOES - MINNESOTA - Collected 15,000 in 16 light traps week ending July 9. Aedes vexans in 75 percent of adult and larval collections. Coquillettidia perturbans in 17 percent of light trap collections. Culex tarsalis, vector of encephalitis, found in 10 percent of larval collections. A. vexans dominant in evening bite collections. Spring brood Aedes still abundant in evening and daytime bite collections. Heavy rains occurred July 7, 10, 12, and 14 in many areas. Several broods of A. vexans in water now with heaviest brood resulting from rain of July 7. This brood pupating July 14 and 15; emergence began July 16, will continue through July 19. Adults will increase substantially in all southern areas beginning July 19. Probably will be heaviest brood of season. (Minn. Pest Rpt.). WISCONSIN - Moderate to severe annoyance to dairy cattle in portions of St. Croix, Rock, and Calumet Counties. Moderate annoyance to man in parts of Washburn, Sauk, Columbia, Dane, Bayfield, Walworth, Juneau, Iron, Eau Claire, Calumet, Brown, and Adams Counties. (Wis. Ins. Sur.). WYOMING - Ranged 10-40 per side on cattle west of Laramie, Albany County. (Spackman, Lloyd). TEXAS - In Jefferson County, *Aedes sollicitans* and *A. vexans* found in large numbers during June in Spindletop Park area. *Psorophora confinnis* populations decreased in western Beaumont; *P. ciliata* occurred in low numbers. *Culex pipiens quinquefasciatus* occurred throughout county. (Thompson). Mosquito activity very low in Harris County during May; adults averaged 3.5 per trap per night. (Bartnett).

HORN FLY (*Haematobia irritans*) - IDAHO - Abundant on untreated pastured cattle in several northern areas. Herd averages of 125 per animal side common. Herd averages up to 200+ per animal observed. (O'Keeffe). NEBRASKA - Counts of 500+ per head of untreated range cattle in McPherson, Lincoln, Keith, and Arthur Counties. (Campbell). WISCONSIN - Moderate on cattle in most areas except St. Croix County where problem severe. Annoyance apparently severe on some herds in Dane, La Crosse, and Vernon Counties July 13. (Wis. Ins. Sur.). ILLINOIS - Decreased slightly on pastured cattle past 2 weeks. Currently 50-90 per animal. (Ill. Ins. Rpt.). OHIO - Adults 75-500+ on cattle in Noble County. (Pratt). MARYLAND -Counts below high levels of last 3 years in most areas. Ranged 0-20 per head in Baltimore, Frederick, and Carroll Counties. (U. Md., Ent. Dept.). FLORIDA - Averaged 36 per dairy cow checked near Gainesville, Alachua County. Determined by E. Head. (Fla. Coop. Sur.). MISSISSIPPI - Average per animal by county: Monroe 100, Montgomery 100, Tishomingo 17, Holmes 260, Hinds 18. Total of 1,815 head checked. (Sartor). TEXAS - Increase noted throughout south-central and coastal areas. Populations in northern panhandle counties remain constant due to hot, dry weather. (Cole, Clymer). OKLAHOMA - Ranged 300-800 per head on cattle in Delaware County, 200-500 in Payne County. Moderate to heavy in Hughes, Cleveland, and Cotton Counties. (Okla. Coop. Sur.).

STABLE FLY (*Stomoxys calcitrans*) OKLAHOMA - Averaged 2 per head on untreated dairy cattle in Payne County. (Okla. Coop. Sur.). NEBRASKA - This species and *Musca domestica* (house fly) averaged 10-14 per Scudder grid in feedlots in Lincoln and Keith Counties. Stable fly 10-15 per leg. (Campbell). IOWA - *S. calcitrans* decreased to 0-6 (average 2.7) per leg on untreated cow herd in Story County. (Iowa Ins. Sur.). WISCONSIN - Light to moderate in most areas except Calumet County where severe annoyance to cattle evident. (Wis. Ins. Sur.).

TABANID FLIES - NEVADA - *Apatolestes comastes willistoni* collected at Rosebud, Pershing County, for a new county record. (Bechtel, Martinelli). UTAH - *Chrysops discalis* annoying livestock and man in western Davis County (Judd); this species and *Tabanus* spp. annoying horses in Box Elder County, and *T. punctifer* and C. *C. discalis* annoying horses and livestock at Snowville, Collinston, and Deweyville. *Hybomitra sonomensis* and *C. aestuans* abundant in Locomotive Springs area. (Knowlton). NEW MEXICO - *Chrysops* spp, very abundant and annoying to man and animals in Chama and Tierra Amarillo area of Rio Arriba County. (Heninger). OKLAHOMA - *Tabanus* spp. averaged 4 per head on Payne County cattle. (Okla. Coop. Sur.).

AMERICAN DOG TICK (*Dermacentor variabilis*) - WEST VIRGINIA - Adults collected on corn by J.N. Angotti and J. Lew in Lewis County July 14, 1971. This is a new county record. (W. Va. Ins. Sur.).

BENEFICIAL INSECTS

SYRPHID FLIES - IDAHO - Common in wheat infested with English grain aphid at Coeur d'Alene, Kootenai County. (Stranahan). WASHINGTON - Larvae unusually numerous in eastern area, particularly in wheat and related cereals. Reported heaviest in Grant, Adams, and Spokane Counties. (Kulp et al.).

AN ICHNEUMON (Bathyplectes curculionis) - KENTUCKY - Parasitized 2 of 177 Hypera postica (alfalfa weevil) larvae from Hardin County, 1 of 86 H. postica larvae from Clark County, and 12 of 95 H. postica larvae from Fayette County. (Barnett)

HONEY BEE (Apis mellifera) - MICHIGAN - Severe drought in southeast Oakland County weakened colonies; now using brood chambers almost exclusively for honey storage. Few eggs laid. (Mackay).

BUMBLEBEES - OHIO - Workers of Megabombus auricomus, M. pennsylvanicus, and Pyrobombus bimaculatus collected while foraging on red clover in Champaign County July 13. Queen of P. impatiens collected foraging on red clover near Pharisburg, Union County, July 14. (Andress).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - WEST VIRGINIA - Adults collected on oats in Summers County June 7 by B.S. Neel; larvae in Mercer and Raleigh Counties June 28 by E. Bostic; larvae in Berkeley, Jefferson and Morgan Counties June 2 by J.D. Hacker. VIRGINIA - Larvae in oats in Floyd County June 28 by W.B. Mason and L.D. Martin. Determined by R.E. White. These are new county records. (PPD).

GRASSHOPPERS - WASHINGTON - Oedaleonotus enigma and Aulocara elliotti serious on about 21,000 acres of reseeded rangeland on Yakima Indian Reservation, Yakima County. Ranged 12-75 per square yard, mostly adults. Mating in progress. Damage to crested wheatgrass severe; most plants defoliated to ground level. IDAHO - Adult flights abundant in Washington and Adams Counties; infestations heaviest in 10 years. Total acres to be treated 221,221. (PPD). NEVADA - Melanoplus sanguinipes nymphs and adults ranged up to 20 (averaged 5) per square yard on 80 acres of certified bromegrass in Reese River Valley, Lander County. (Peters). Treated 170 acres of seedling alfalfa in Reese River Valley for protection from adjacent 1,300 acres of abandoned alfalfa; counts ranged 15-30 per square yard. (Hilbig). UTAH - Troublesome on rangeland and farms in Calbo area of Juab County (Esplin); abundant in portions of Webster County (Knowlton); heavy damage to pollen and nectar plants at North Ogden caused removal of apiary during period ending July 9 (Knowlton). WYOMING - Survey conducted on Forest Service land in Big Horn, Washakie, and Johnson Counties June 29 through July 1 showed counts up to 200 Camnulla pellucida per square yard. Spray program tentatively planned for July 20 on 11,300 acres in scattered parks and meadows. (Patch, Daiss). NORTH DAKOTA - Economic in 8 southeastern and north-central counties. (PPD). SOUTH DAKOTA - Continue to increase in southern Beadle and northern Sanborn Counties. Melanoplus bivittatus and M. differentialis adults observed and nymphs of M. femurrubrum. Counts of 20-30 per square yard in alfalfa checked. Economic in 40 acres of corn; controls applied. (Jones, July 9). NEBRASKA - Economic in 5 northwestern and central counties. (PPD, July 15).

GYPSY MOTH (Porthetria dispar) - MARYLAND - Adult trapped in Caroline County by R. Smith July 7. Determined by E.L. Todd. This is a new county record. (PPD). NEW YORK - Damage at peak in Rockland County. Egg laying in Orange County July 7; adult emergence in Dutchess and Putnam Counties same date. (N.Y. Wkly. Rpt., July 12). CONNECTICUT - Adults laying eggs since July 10. Egg masses heavy in some places. (Savos, Kollas).

JAPANESE BEETLE (Popillia japonica) - SOUTH CAROLINA - Moderate and some damage to roses and grapes in Pickens County. Large numbers also feeding on Kudzu surrounding pasture. (Lott). TENNESSEE - Adults trapped in new areas of Knox, Washington, Monroe, and Bradley Counties; increasing in Sevier, Loudon, and Blount Counties. Damaging populations building up in Johnson County. Trapping and visual surveys negative in Rhea, Monroe, Cumberland, Meigs, McMinn, Bledsoe, White, and Van Buren Counties. (Hammett, Van Landingham). MARYLAND - Adults desilked 11 percent of 50 acres of corn near Ingleside, Queen Annes County. Infestations ranged 1-2 percent in most fields in Kent, Caroline, Talbot, and Dorchester Counties. (U. Md. Ent. Dept.). WEST VIRGINIA - Adult damage moderate to ornamental shrubs in Mason, Putnam, Wood, and Kanawha Counties. Damage to field corn about 10 percent in Kanawha, Putnam, Mason, Jackson, and Wood Counties. (W. Va. Ins. Sur.) OHIO - Unusually heavy adult populations reported in Lucas, Wayne, Stark, Ashtabula, and Tuscarawas Counties. Beetles reportedly damaging dogwood, flowering plum, grape, roses, and many other ornamentals. (Rings). Feeding on ornamentals in Medina County. (Thoburn). Swarming over lawns, roses, and plum trees in Stark County. Averaged 1 per 2 rose blossoms in Wayne County. (Lingquist). Large numbers observed defoliating Chinese elm in Wooster, Wayne County. (Andress). INDIANA - Reported heavy in gardens, soybeans, and other field crops in north-central and west-central districts and scattered areas in other parts of State. (Sanders). Extensions of previously infested areas seen in Hendricks, Lawrence, and Switzerland Counties. (Clark).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Sterile moth release continued with 2,747,500 at Bakersfield, Kern County; as of July 15, season total 45,685,500. (PPD). ARIZONA - Infested bolls averaged 4.5 percent in untreated fields in north Yuma Valley. Some growers treating in Yuma County. (Ariz. Coop. Sur.).

RANGE CATERPILLAR (*Hemileuca oliviae*) - NEW MEXICO - Scattered infestations observed in Union, Colfax, and Harding Counties. Larvae ranged first to fourth instars. Eggs not yet hatched in areas that have had little or no rainfall. (N.M. Coop. Rpt.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - LOUISIANA - Cysts collected in St. Landry Parish by R.W. Logsdon June 28. Determined by A.M. Golden. This is a new parish record. (PPD). TENNESSEE - Continues to cause stunting of beans on resistant and nonresistant plants in all western areas. (Gordon).

DETECTION

New State Records - AN ARMORED SCALE (*Lopholeucaspis japonica*) DELAWARE - New Castle County. (p. 532). A MEMBRACID (*Antianthe expansa*) HAWAII - Oahu Island. (p. 536).

New County and Parish Records - AMERICAN DOG TICK (*Dermacentor variabilis*) WEST VIRGINIA - Lewis (p. 533). CEREAL LEAF BEETLE (*Oulema melanopus*) WEST VIRGINIA - Summers, Mercer, Raleigh, Berkeley, Jefferson, Morgan; VIRGINIA - Floyd (p. 534). FACE FLY (*Musca autumnalis*) MARYLAND - Queen Annes, Caroline (p. 532). GREENBUG (*Schizaphis graminum*) ARKANSAS - Clay (p. 522). GYPSY MOTH (*Porthetria dispar*) MARYLAND - Caroline (p. 534). HOLLYHOCK WEEVIL (*Apion longirostre*) MISSOURI - Dade, Jackson; KANSAS - Neosho, Montgomery, Allen, Wilson, Anderson, Cheyenne, Sherman, Ford (p. 531). NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) TENNESSEE - Weakly (p. 523). A PSYCHID MOTH (*Apterona crenulella*) OREGON - Grant; NEVADA - Lander (pp. 524, 531). PEAR PSYLLA (*Psylla pyricola*) UTAH - Salt Lake (p. 529). SOYBEAN CYST NEMATODE (*Heterodera glycines*) LOUISIANA - Landry (p. 535). A WEEVIL (*Mecinus pyraster*) VIRGINIA - Montgomery (p. 524). YELLOW SUGARCANE APHID (*Sipha flava*) ARKANSAS - Clay, Greene (p. 524).

CORRECTIONS

CEIR 21(23):400 - CEREAL LEAF BEETLE PARASITES - Diaparis carinifer should read Diaparsis carinifer.

CEIR 21(27):477 - HORSE BOT FLY (Gasterophilis intestinalis) - INDIANA - "Larvae emerged ..." should read "*Adults* emerged ..." (Meyer).

CEIR 21(28):486 - EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - " ... Spot checks ... in Granville area, Person County." should read " ... in Granville and Person County area." (PPD).

CEIR 21(28):496 - A BRACONID (Cardiochiles nigriceps) - NORTH CAROLINA - " ... in Person area of Granville County." should read " ... in Person and Granville County area." (PPD).

HAWAII INSECT REPORT

New State Record - Three adults of a MEMBRACID (*Antianthe expansa* (Germar)) caught floating alive in swimming pool at Salt Lake, Oahu, one each June 14, 18, and 22, 1971, by George Komatsu. Two more subsequently caught in light trap at Honolulu International Airport. Determined by R.C. Froeschner. This membracid is common in Mexico and Central America. In Costa Rica, it is reported to be a pest of sweet peppers; wild food hosts include plants in the genera *Cestrum*, *Solanum*, and *Acnistus*. (Funasaki). Also reported from Arizona, California, Florida, Illinois, and Texas. (PPD).

General Vegetables - TARO LEAFHOPPER (*Tarophagus proserpina*) light in one acre of taro at Waihee, Maui; nymphs 3-5 per leaf sheath, but only 10 percent of leaves infested. (Miyahira).

Fruits and Nuts - Larvae and adults of PALM MEALYBUG (*Palmicultor palmarum*) moderate on 16 coconut trees at Lahaina and Kihei, Maui. Larvae of *Cryptolaemus montrouzieri* (a lady beetle) moderate amid infestation. (Ah Sam, Miyahira). Larvae of a NOCTUID MOTH (*Phlegetonia delatrix*) moderate on young foliage of Java plum (*Eugenia cuminii*) at Hana, Maui, and at Pukoo, Molokai. (Miyahira).

Man and Animals - Trapped 861 VEXANS MOSQUITO (*Aedes vexans nocturnus*) and 1,036 SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) in 54 light traps during May; during June, totals in 55 light traps were 291 and 750, respectively. Averages per trap: *A. vexans nocturnus* - May 15.9, June 5.3; *C. pipiens quinquefasciatus* - May 19.2, June 13.6. *Aedes* catches per trap ranged to highs of 603 at Kahaluu in May and 110 at Kailua in June. *Culex* catches per trap ranged to highs of 219 at Nanakuli in May and 39 at Kahuku in June. (Mosq. Cont. Br., Dept. Health).

Beneficial Insects - All stages of a TINGID BUG (*Leptobyrsa decora*) heavy on lantana at Pulehu, Maui. Foliage severely chlorotic due to intense feeding. All stages light in Waihee, Maui. (Miyahira). Adults and larval mines of LANTANA HISPID (*Uroplata girardi*) moderate on lantana foliage in Waihee, Maui. (Miyahira).

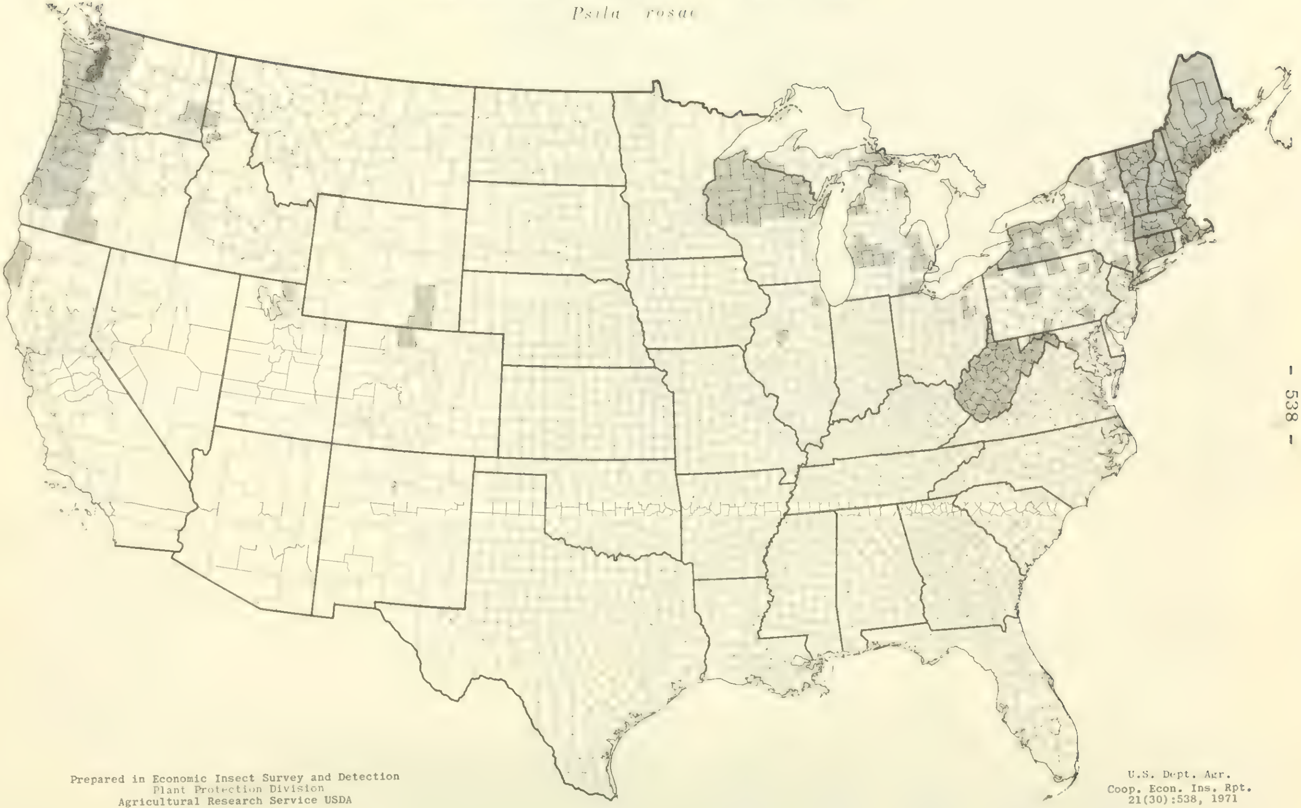
Miscellaneous Pests - GIANT AFRICAN SNAIL (*Achatina fulica*) infestation heavy in 300-foot long rock hedgerow overgrown with wasteland brush on grounds of the University of Hawaii, Oahu. Approximately 1,000 snails (2-3 inches long) can be collected in area. (Olson).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 9/15			BL					1	14							4				7	3	2		
IOWA																								
Kanawha 7/6-11			BL	38			28										4	36	108					
Napier 7/8-13			BL	96			53										2	168	448					
KANSAS																								
Great Bend 7/1-10			BL	16		1									1		1	6	28		72	5	1	
Tribune 7/1, 6, 9			BL	20		6	11											3	18					
KENTUCKY																								
Lexington 7/13			BL													2		2						
MINNESOTA																								
Shakopee 6/6-12			BL																12					
Worthington 6/6-12			BL														3		17					
MISSISSIPPI																								
Stoneville 6/9-15	72-100	0.05	BL	2				9		36								1	12		4	20	3	
MISSOURI (County)																								
Pemiscot 7/9-15			BL	5						47							106	2	6		17	12		
Platte 7/9-15			BL	6													1	28	10			19		
NEW HAMPSHIRE																								
Lee 7/12			BL	3																				
NEW JERSEY																								
Plainsboro 7/7-13			BL	39						5								12	58		4	8		
Seabrook 7/7-13			BL	42													27	35	168			147		
NORTH DAKOTA																								
Bismarck 7/8, 9, 12			BL											2				1	1					
Fargo 7/9, 10			BL											1					15					
OHIO																								
Wooster 7/9-15			BL	151			5										9	55	256					
TENNESSEE (County)																								
Fayette 7/12-16			BL	22	1			19		3					1		106	2	36		1	138		
Franklin 7/12-16			BL	4						1					3				4			8		
TEXAS																								
Waco 7/9-15	78-100		BL	33				106	10									1		82	81	54	325	

Distribution of Carrot Rust Fly

Psila rosae



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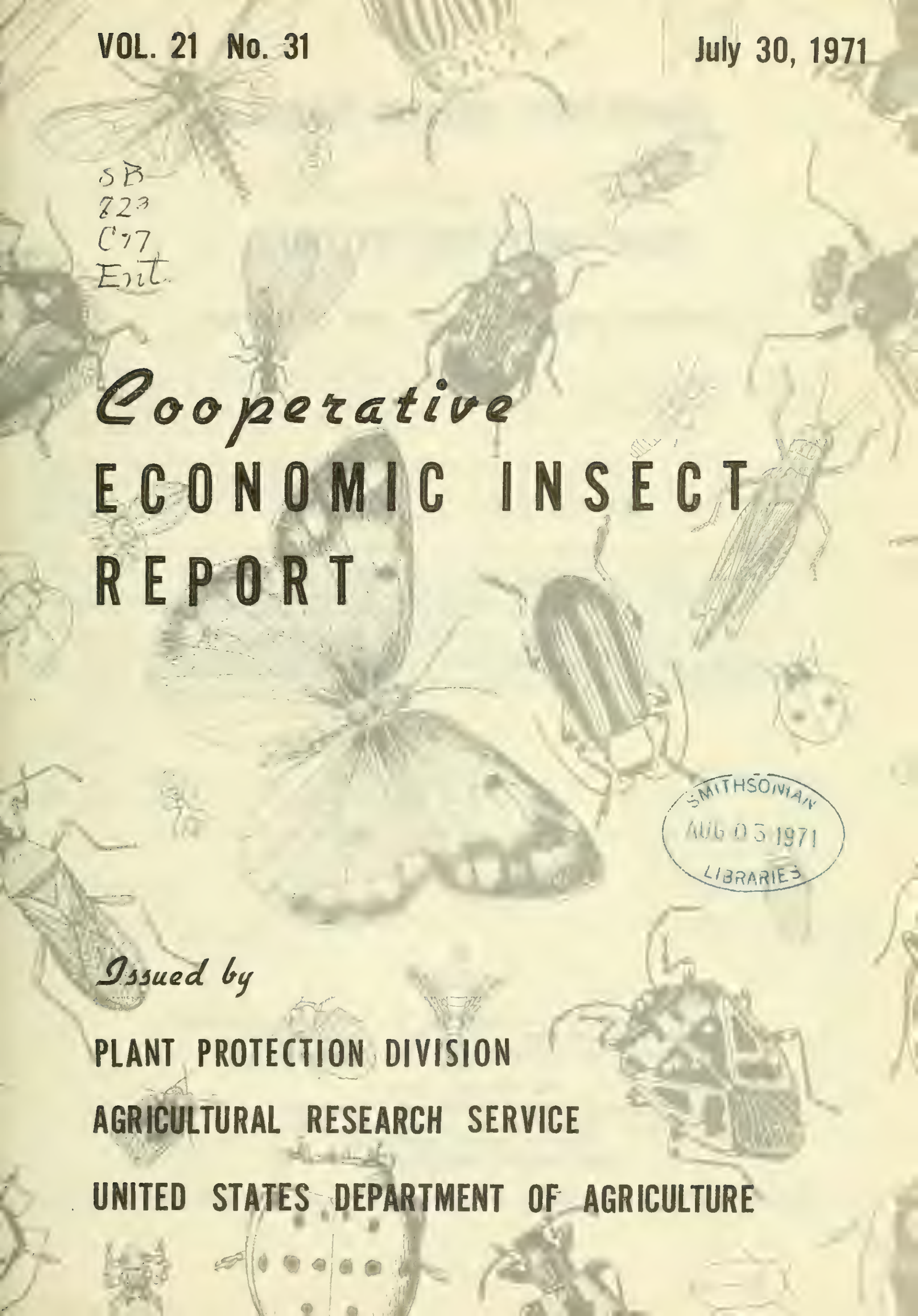

Cooperative
ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Volume 21 July 30, 1971 Number 31

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG damaged sorghum in Missouri, Kansas, Iowa, and South Dakota. (pp. 541-542). HORNWORM moths heavier than normal in Wisconsin and Michigan. (p. 542). POTATO LEAFHOPPER building up in central New York. Damaged alfalfa in Pennsylvania and Wisconsin, soybeans in Ohio. (p. 542).

EUROPEAN CORN BORER infestations heavy in Maryland, damaged corn in Ohio. (p. 542). WESTERN BEAN CUTWORM moths heavy in light traps in Nebraska. (p. 543). CORN ROOTWORMS lodging corn in Wisconsin, root damage reported in South Dakota; damaged corn for first time in many years in Utah. (p. 544).

SATIN MOTH unusually heavy in Oregon. Larvae of a NOTODONTID MOTH expected to cause severe defoliation on Manistee National Forest in Michigan. (p. 551).

GRASSHOPPERS continue heavy in several States. (p. 553).

Large scale control program underway against vectors of Venezualan equine encephalomyelitis in Texas. (pp. 552-553). As of July 27, a total of 3,001,461 acres in Texas treated one time; of this total 382,619 acres treated for second time. In Louisiana 720,272 acres treated one time.

Detection

New State records include a MOSQUITO from Maryland (p. 522), a PLATYGASTERID WASP and a EURYTOMID WASP from Pennsylvania (p. 553).

For new county, island, parish, and independant city records see page 548.

Special Reports

Estimates of Damage by the European Corn Borer to Grain Corn in the United States in 1970. (pp. 557-558).

Reports in this issue are for week ending July 23 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JULY 26

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: High temperatures prevailed in the Far West and along the Gulf of Mexico. The Northeast was mostly cool and comfortable. Thundershowers were widespread over the Central and East.

PRECIPITATION: A large cool high covered much of mid-America early in the week. A front stretched from the northern Atlantic States to the southern Great Plains. It was the battle line which marked the leading edge of the cool dry air, which pushed in from the north to replace the retreating warm humid air that lay over the South. A line of showers and thunderstorms occurred along the front. Some of the thunderstorms were accompanied by torrential downpours, strong gusty winds, or hail. A few tornadoes dotted the open country in Ohio, Louisiana, and Georgia. Bridgeport, Connecticut, received 5.95 inches of rain the 24-hour period ending Tuesday morning. Light scattered precipitation occurred in the Rocky Mountains Wednesday, in the Great Plains Thursday, from northeastern Texas to the Great Lakes Friday, and from Louisiana to New England Saturday. Most of the weekend showers occurred in the vicinity of a slow moving cold front that stretched from the Northeast to the southern Great Plains. At times, lines of thunderstorms marked the position of the front. Some of the thunderstorms produced hail and strong winds. Other thunderstorms dotted the warm humid Southland. Weekly precipitation totals were generally less than 0.50 inch over the western half of the Nation and ranged widely from 1 inch to locally 5 to 6 inches or more over the eastern half of the Nation.

TEMPERATURES: Hot sunny weather prevailed over the Western States early in the week. On Tuesday, the mercury reached 107 at Yakima, Washington, and 108° at Red Bluff, California, 100° or higher over the southwestern deserts, and the 90's across the South to the Atlantic Ocean. By Wednesday afternoon, the temperatures in parts of the deserts had gone above 110°. The heat in the Southwest was especially oppressive because of the unusually high relative humidity in the area. In sharp contrast to the hot weather in the Far West and across the South, weather over the rest of the Nation was quite comfortable. A large high covered the central Great Plains. It brought cooler weather to a large area extending from the Rocky Mountains to the Appalachians. Afternoon temperatures remained in the

Weather of the week continued on page 548.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN EARWORM (Heliothis zea) - MARYLAND - Moths averaged less than 3 per night on Eastern Shore. Egg counts in corn less than 1 infested ear per 30 surveyed. Heaviest first-instar infestation averaged 4 percent in 35 acres near Preston, Caroline County. None found west of Chesapeake Bay. (U. Md., Ent. Dept.). WEST VIRGINIA - Damage light to field corn in Putnam, Mason, and Wood Counties. (W. Va. Ins. Sur.). NORTH CAROLINA - Larvae in corn (majority of fields with ears) declining in Columbus County area. Indicates pupation occurring and subsequent generation should appear on soybeans and cotton in about 3 weeks. Larvae in Clayton, Johnston County, area and at Lewiston, Bertie County, area continue to increase; sixth instars observed at Clayton indicating pupation will begin week of July 26. (Bradley, Hunt). GEORGIA - Light to heavy in south-central area tobacco. (French, July 17). TEXAS - Reported heavy in whorls of some grain sorghum in Collingsworth County. (Clymer et al.). OKLAHOMA - Averaged 3 per 100 heads of sorghum in Harmon County and 2 per 100 heads in Tillman County. Moderate on corn in Cleveland County. (Okla. Coop. Sur.). KANSAS - Averaged 0-2 second to fourth instars per ear in 5 fields of late-silking field corn in Harvey County. (Bell). UTAH - Caused moderate injury to sweet corn in Washington County (Huber); very light in northern areas (Knowlton).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Generally light but persistent in Luna and Dona Ana Counties, controls applied. (N.M. Coop. Rpt.). OKLAHOMA - Averaged 575 per plant on sorghum in Hitchland area and 725 per plant in Hooker area of Texas County. Light to moderate in Cimarron County. Ranged 100-3,000 per plant in tassels of corn in Texas County. (Okla. Coop. Sur.). KANSAS - Light to moderate in sorghum surveyed in southwest, west-central, north-central, northeast, and east-central districts. (Bell). WISCONSIN - Heavy in some fields in central and southwestern counties. Moderate on ears and in silks in Grant and Iowa Counties. (Wis. Ins. Sur.). MARYLAND - Winged adults in most fields in Howard, Baltimore, Carroll, and Harford Counties. First-instar nymphs infested 5-10 percent of corn in Howard, Baltimore, and Carroll Counties. Nymphs usually found deep in whorl in late whorl-stage corn. (U. Md., Ent. Dept.).

GREENBUG (Schizaphis graminum) - COLORADO - Light on sorghum in Larimer County and other northeastern areas. (Hantsbarger). TEXAS - Increased, but still below 1970 level. Some spraying with good control obtained. Most greenbugs parasitized by a small braconid in Deaf Smith County field. Light to moderate greenbug infestations in Dallas, Hartley, Parmer, Deaf Smith, Moore, Oldham, Castro, and Hansford Counties. (Clymer et al.). OKLAHOMA - Averaged 110 per plant on sorghum in Hitchland area and 50 per plant in Hooker area of Texas County. Light to moderate in Cimarron County. Ranged up to 50 per leaf on sorghum in Caddo County, colonies light. (Okla. Coop. Sur.). ARKANSAS - First infestations of season observed in sorghum breeding plots in northwest area. Infestations relatively light but more general than in other areas of State. Occasional plants with up to 5-6 colonies per plant. (Boyer). MISSOURI - Infested all fields checked in west-central and southwest areas. Small colonies ranged 1-3 per plant in southwest. Colonies ranged 1-8 per plant in west-central area with severe discoloration on bottom 4-5 leaves. (Peters). KANSAS - Economic in sorghum in Johnson, Miami, Shawnee, and Washington Counties. In Shawnee and Washington Counties, severe infestations only on seedling sorghum (2 to 5-inch tall plants). In Shawnee, Douglas, Nemaha, Marshall, Washington, Republic, Jewell, Cloud, and Clay Counties parasitic wasps major factor in greenbug control. In some fields lady beetles also appeared to be of significant importance in control. (Bell).

NEBRASKA - Greenbug spotted and heavy, up to 2,000 per lower leaf in grain sorghum throughout southeast corner. Increasing rapidly July 12-16 in Nemaha, Gage, and southern Lancaster Counties, up to 3 leaves killed. Parasitism variable, with up to 30 percent of aphids parasitized in few fields and almost no activity in others. Predators, particularly lady beetles, abundant and continue to increase. Near Mead, Saunders County, lady beetles in some fields holding greenbug to 10 or less per plant. (Staples et al.). Lady beetles unusually abundant in grain sorghum in Richardson County. (Aitken). Little greenbug activity noted in York, Platte, and Seward Counties (Staples) and in Lincoln County (Campbell). IOWA - Controls needed in several areas on grain sorghum in southern areas. (Iowa Ins. Sur.). SOUTH DAKOTA - Infestations on sorghum approaching economic levels in many fields; some spraying underway. (Jones).

HORNWORMS (Manduca spp.) - WISCONSIN - Second and third instars noted defoliating tobacco in southern Dane County field in which cutworm damage appeared to be subsiding. Adults of M. quinquemaculata (tomato hornworm) appearing in larger numbers than normal in blacklight traps. (Wis. Ins. Sur.). MICHIGAN - Moth collections heavier than normal as far north as Montcalm County. Growers should remain alert next 3-4 weeks. (Newman). MARYLAND - Larvae infested 2-5 percent of tobacco plants in St. Marys, Charles, Prince Georges, and Calvert Counties. (U. Md., Ent. Dept.). VIRGINIA - Appearing in some tomato fields in Westmoreland County. (Ptucha).

POTATO LEAFHOPPER (Empoasca fabae) - NEW YORK - Building up in central areas, expect trouble on beans. (N.Y. Wkly. Rpt., July 19). PENNSYLVANIA - Populations variable in alfalfa. Some untreated fields show moderate to severe stunting and yellowing. (Gesell). MARYLAND - Heavy but spotty in alfalfa throughout central counties. Ranged 0-10 per sweep in most alfalfa in Baltimore, Carroll, Frederick, and Howard Counties. Heaviest counts ranged 30-100 per sweep. Ranged 0-25 per sweep in alfalfa on Eastern Shore in Queen Annes, Kent, Talbot, and Caroline Counties, with no heavy infestations. (U. Md., Ent. Dept.). VIRGINIA - Nymphs and adults 80-100 per 100 sweeps on soybeans in Westmoreland County. Ranged 25-40 per 100 sweeps in Essex and King and Queen Counties. (Allen). Nymphs and adults 75 per sweep in Augusta County field. (Hendrick, July 15). Nymphs averaged 20 per 100 sweeps in Rockbridge County. (Allen). OHIO - Adults, 6 per leaf, damaged soybeans in Wayne County. (Flessel). WISCONSIN - Nymphs common on Norway maple in Kenosha County nurseries July 20. Most larger nurseries treating for this insect regularly. Damaging populations scattered, apparently more prevalent in early cut and regrowth to blossom alfalfa. Nymphs ranged 15-30 per sweep and yellowing appearing more slowly than normal. Damage appearing in Kewaunee County. (Wis. Ins. Sur.). MISSOURI - Light on alfalfa in central and southeast areas. Ranged up to 120 per 10 sweeps. (Munson).

POTATO PSYLLID (Paratrioza cockerelli) - COLORADO - Psyllid yellows damage reported on tomatoes in Weld County. (Rothman).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Immatures continue to cause light damage to tobacco in Anne Arundel, St. Marys, Charles, and Prince Georges Counties. Infested plants ranged 2-6 per 50 plants surveyed. (U. Md., Ent. Dept.). TENNESSEE - Very light on tobacco in Robertson and Sumner Counties. Most larvae sick and dying. Damage to date very light. (Gordon).

TOBACCO HORNWORM (Manduca sexta) - UTAH - Some damage to tomato foliage at Brigham City, Box Elder County. (Knowlton). KENTUCKY - Light and scattered on tobacco throughout Warren County; larvae averaged 2 per 100 plants at one location. Very light to nonexistant on tobacco in Christian, Logan, Graves, and Todd Counties. (Barnett). NORTH CAROLINA - Larvae noneconomic in most fields statewide. Populations in Columbus County and Bladen County area averaged about 3 percent. Less than 1 percent of plants infested in Lenoir and Surry Counties. (Hunt).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Adults averaged 68 per night in blacklight trap at Bridgeville, Sussex County. (Burbutis, Lesiewicz). MARYLAND - Percent infestation ranged 20-100 statewide, heavy infestations found in every county. Moths averaged 10 per night at blacklight stations in Queen Annes and Dorchester Counties. First-brood pupation expected to peak within 10 days in Frederick, Carroll, Baltimore, and Howard Counties. (U. Md., Ent. Dept.). VIRGINIA - Generally lighter than 1970 in Piedmont and Tidewater areas. Infestations of 5-10 percent in Hanover, King and Queen, and Botetourt Counties.

Infestations ranged 1-5 percent in Richmond and Westmoreland Counties. (Allen). NORTH CAROLINA - Infested 2 percent of corn with ears in Franklin, Wilson, Bertie, Hertford, and Northampton Counties. Second-generation larvae beginning to penetrate stalks. (Hunt). KENTUCKY - Larvae light and scattered in Graves, Hickman, and Carlisle Counties. (Barnett). WEST VIRGINIA - Generally light statewide; damage 20 percent in one Monroe County field. (W. Va. Ins. Sur.).

OHIO - O. nubilalis damage evident on 75+ percent of no-till corn in Harrison County July 15. (Holdsworth). MICHIGAN - Warm weather advanced normal emergence date for second brood. Total of 26 adults collected at Monroe County blacklight station. Limited egg laying in progress, will peak next 10-14 days. Larval problems expected to continue until frost. Second brood about 7 days earlier than 1970, 14 days ahead of 1969 season. (Newman). WISCONSIN - No emergence of second-flight moths in blacklight trap catches from Lancaster to Plover. In eastern counties, moth catches continue relatively heavy at few locations. Larval development variable. (Wis. Ins. Sur.). ILLINOIS - Development retarded due to cooler weather. First-generation borers per 100 stalks averaged by area: Northwest 7, northeast 2, west 16, central 4, west-southwest 6, and southwest 19. In southern and northwestern areas, pupation should be complete and moth emergence advanced. Egg laying progressing rapidly, should peak next 10 days; little hatch noted. Egg laying should be rapid in west-southwest and western areas. Little egg laying will take place in northern area for about 10 days. (Sur. Bul.). MINNESOTA - Pupation started; most borers in late instars. If present weather prevails, bulk of moth flight and egg laying should start first week of August. Some early moths seen past week. Populations in west-central district lightest north of Swift County; no change expected. Same true for northwest district where populations continue light. Heaviest counts and damage in State south of line from Minneapolis and St. Paul west to State line. Stalk breakage above and below ear due to tunneling becoming noticeable in many fields. Tassels breaking off but pollination not affected in fields surveyed. (Minn. Ins. Rpt.).

SOUTH DAKOTA - First-brood O. nubilalis larvae continue to damage untreated corn in eastern area. Pupae found July 15 near Freeman in eastern Hutchinson County. Early larvae still present in Brookings County June 19. (Jones, Kantack). NEBRASKA - First emergence of second-brood moths noted at Lincoln, Lancaster County, July 20 and in Hall County July 22. One Lancaster County cornfield near 100 percent infested with 1-3 third to fifth instars and occasional pupa. Pupation estimated at about 35 percent, emergence less than 1 percent (Keith, et al.). In 6 Dawson County fields, plants averaged about 30 percent infested with first-brood borers. (Keith). Corn plants ranged 30-70 percent infested in 7 Hall County fields. (Roselle). KANSAS - Recent blacklight trap catches indicate first-generation moths beginning to emerge in Republic County. Most pupated in corn in Republic County and emerged in Brown County. Freshly laid eggs found in field of pretassel, late-planted corn in Brown County and none found in Republic County. In field in Brown County where 80 percent of plants infested with 1-3 second and third instars, 14 days ago, less than 10 percent of stalks bored this week, indicating high larval mortality due to unknown causes. First-generation borer damage appears to be much lower than 1970 in Brown County. (Bell). MISSOURI - Counts in late corn in southeast area showed 0-22 egg masses per 100 plants, small larvae on 5-71 percent of plants. (Munson). ARKANSAS - Limited survey indicates no problem in northeast area where corn acreage higher than in other areas. Most of crop planted early. (Boyer).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - COLORADO - Adults appearing in light traps in Weld County; range 0-6 per week. (Urano). NEBRASKA - Moth flights heavy in Parks area, Dundy County; about 2,500 moths caught each night in blacklight trap operated July 17-18. Egg masses averaged less than 1 per 100 plants in 3 irrigated cornfields in Hitchcock County; averaged 1 per 50 plants in 2 irrigated and 2 dryland fields in Dundy County. (Munson, Wedberg).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy in sorghum in Caddo, Washita, and Jackson Counties and in corn in Canadian and Jackson Counties. (Okla. Coop. Sur.). MARYLAND - Infestations in late-planted field corn expected within 10 days in Frederick, Montgomery, and Carroll Counties. (U. Md., Ent. Dept.).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - D. longicornis (northern corn rootworm) and D. virgifera (western corn rootworm) adults emerging; D. virgifera most common. Diabrotica spp. adults 3+ per plant in Grant County field corn. Mating begun. Lodging reported in Trempealeau, Walworth, Waushara, Rock, and Grant Counties. Lodging due to wind in some central county fields with no rootworm population. (Wis. Ins. Sur.). MINNESOTA - D. longicornis and D. undecimpunctata undecimpunctata (southern corn rootworm) adults found in Dakota, Carver, Rock, Nobles, and Redwood Counties. Most still in larval and pupal stages. Little lodging observed. No wilting leaves seen even in severely damaged fields. (Minn. Ins. Rpt.). SOUTH DAKOTA - Root damage extensive on untreated corn, particularly in northern Moody and eastern Brookings Counties. Pupation and adult emergence not yet general in these counties through July 19. (Jones, Kantack). Adult population may be at damaging levels in some fields next few weeks. (Jones). KANSAS - Adults emerging in field corn statewide. Very few found in silking corn in west-central and north-central districts but as high as 3 per plant (95 percent D. virgifera) in silking corn in Brown and Stanton Counties. (Bell). UTAH - Damaging 50 acres of corn in Ogden and Kanesville area of Weber County. First season of corn rootworm injury of any extent. (Roberts, Knowlton).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - WYOMING - Larvae ranged 15-20 per plant in untreated fields in Goshen County July 13. Damage in several fields ranged none to severe; damage to roots ranged moderate to severe in untreated fields. Population 10 percent adults, 75 percent larvae, 15 percent pupae. (Burkhardt). COLORADO - Adults ranged 0-5 per plant in Greeley, Lucerne, and Fort Lupton areas of Weld County. (Rothman). Much damage to untreated corn in Montezuma County. (Lancaster). OKLAHOMA - Adults averaged 5 per plant on untreated corn in Texas County. (Okla. Coop. Sur.). NEBRASKA - Light, averaged less than 1 per plant in 7 Hall County and 6 Dawson County cornfields. (Roselle et al.). NORTH DAKOTA - First adults of season observed on Cass County corn July 17; averaged less than 1 per plant. (Brandvik).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW HAMPSHIRE - Larvae 7-8 per plant in field corn, noted 2 adults emerging, at Charlestown, Sullivan County. (Fisher). NEW JERSEY - Larvae light to moderate, feeding on roots in experimental corn plots near Bloomsbury, Hunterdon County. Many larvae full grown. (Ins.-Dis. Newsltr.). PENNSYLVANIA - Averaged one larva per plant in Wyoming County field that has been in continuous corn for 5-10 years. Most in last instar July 14. No pupae found. Several small fields in Centre County in continuous corn for 4 years averaged 6 per plant with 75 percent in pupal stage July 16. (Gesell).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Infestations in field corn ranged 40-100 percent in Frederick, Montgomery, Howard, Queen Annes, Kent, Talbot, and Caroline Counties. Controls not needed at present. (U. Md., Ent. Dept.).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Damage light to grain sorghum in Noxubee County, some fields treated. (Sartor). ARKANSAS - No damage occurred, no treatments applied except for few isolated cases not needed. First midge of season observed July 21 in breeding plots in Washington County. Remains much below treatment level in southeast, east-central, and northeast areas. (Boyer). MISSOURI - Midges ranged 5-10 per head on sorghum in susceptible stages in southeast area. (Houser).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Apparently increasing in older grain sorghum but still light in most areas. Light to heavy in Castro, Deaf Smith, Parmer, and Bailey Counties. Several beneficial insects, including a predacious thrips, appear to be feeding on mites. (Clymer et al.).

YELLOW SUGARCANE APHID (*Sipha flava*) - ARKANSAS - Infestations observed for first time this season in northwest area. Numbers low but aphids easier to find than in past years, indicating gradual buildup. (Boyer).

TURF, PASTURES, RANGELAND

A BILLBUG (*Sphenophorus phoeniciensis*) - CALIFORNIA - Adults 100 per square yard of Bermuda grass turf in El Centro, Imperial County. (Cal. Coop. Rpt.).

GRASSHOPPERS (*Melanoplus* spp.) - MARYLAND - Nymphs ranged 3-15 per square yard of grass and legume mixture planted along many State and Interstate highways in Baltimore, Frederick, Washington, and Carroll Counties. May move into adjacent croplands within next few weeks. (U. Md., Ent. Dept.). ARKANSAS - Primarily *M. differentialis* and *M. femurrubrum* continue troublesome in extreme northwest area. About 1,500 acres treated in Washington County. (Boyer).

A LEAFHOPPER (*Dikraneura carneola*) - OREGON - Severely damaged Alta fescue, pubescent wheatgrass, and orchard grass on 350-acre range revegetation project on Aldrich Mountain, Malheur National Forest. No controls undertaken this year. Determined by P.W. Oman. (Orr).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - MONTANA - Infestations on second-crop alfalfa heaviest in many years in Blaine County. Damage in other areas reduced due to parasites and predators. (Pratt, July 16). OREGON - Continuous egg hatch for 60 days until mid-July. Many early instars still present. Populations in infested areas (apparently fewer than 1970) about 3 times larger than 1970 in parts of Crook and Deschutes Counties. (Bunch). VIRGINIA - Adults 10 and larvae 5 per 100 sweeps in Augusta County field. (Hendrick, July 15). Larvae 25 per 100 sweeps in 2 fields in Rockbridge County. (Allen, July 21). VERMONT - Damage moderate to heavy on scattered late-cut alfalfa. (Nielsen).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Larvae per 100 sweeps in Yuma County ranged 40-80 at Dome, 20-150 on Yuma Mesa; averaged 15 in Cochise County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Adult flights heavy in Yuma County; larvae per 100 sweeps ranged 10-30 on Yuma Mesa, 80-900 at Wellton and Dome. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - MASSACHUSETTS - *L. lineolaris* (tarnished plant bug) adults 63 per 100 sweeps of alfalfa in Hampshire County field. (Miller). NEVADA - Mostly *L. hesperus* ranged 8-12 nymphs and 10-20 adults per sweep in alfalfa seed fields at Dixie Valley, Pershing County. Current controls in area ineffective. *L. elisus* and *L. hesperus* averaged 1 per sweep in seed alfalfa at Lovelock, Pershing County; controls effective. (Stitt).

PEA APHID (*Acyrthosiphon pisum*) - NEVADA - Ranged 10-400 per sweep in Lovelock alfalfa seed fields and 15-600 per sweep in Dixie Valley, Pershing County. (Stitt). UTAH - Ranged 200-300 per 10 sweeps in Millard County alfalfa. (Roberts). Moderate in Box Elder County fields (Lindsay); severe in much Sanpete County alfalfa (Herring). COLORADO - Heavy on second cutting of alfalfa in Bracewell area, Weld County. (Urano).

SWEETCLOVER APHID (*Therioaphis riehmi*) - IDAHO - Colonies found on white and yellow sweetclover at Rathdrum, Kootenai County, and at Sandpoint, Bonner County. These are new county records. (Portman).

GRASSHOPPERS - MICHIGAN - Generally more abundant in State than for years. Infesting alfalfa as well as roadside weeds and old pastures. Cutting of alfalfa and large populations will force them to move into other crops. Continuing dry weather will intensify movement. (Connin, Ruppel). MARYLAND - *Melanoplus* spp.

nymphs ranged 2-4 per sweep in alfalfa and red clover in Queen Annes, Talbot, Kent, and Caroline Counties. (U. Md., Ent. Dept.).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - INDIANA - Damaged soybeans in Morgan Clark, Jennings, and Scott Counties. Infestations in central and south-central districts represent extensions of damage range in State. (Matthew).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - KENTUCKY - Adults per 100 sweeps averaged 36 in soybeans in Warren County, 20 in no-till soybeans in Logan County. (Barnett).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MARYLAND - Light but slowly increasing in several areas of Dorchester, Wicomico, Caroline, Talbot, Kent, and Queen Annes Counties. Some yellowing along border rows in several fields in Queen Annes County. (U. Md., Ent. Dept.).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Increasing in Bryan County peanuts. Currently moderate. (Okla. Coop. Sur.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, punctured squares averaged 5.4 percent in 9 treated fields, averaged 6.3 percent in 32 untreated fields. Infestations still light. (Cowan et al.). For Boll Weevil in High Plains see page 553. OKLAHOMA - Punctured squares ranged 25-30 percent in early cotton in Blair and Warren areas of Jackson County. Ranged 2-3 percent in other areas of Jackson County and in Tillman and Harmon Counties. Moderate in Cleveland and Bryan Counties, light in Caddo County. (Okla. Coop. Sur.). ARKANSAS - Adults emerging, infestations increasing. Of 7,202 fields checked, 4,215 infested; 300 or 4.2 percent needed treatment. (Boyer et al.). TENNESSEE - Punctured squares ranged 1-83 percent in regularly infested cotton-growing area. Most fields infested just above 10 percent control level. Dry weather caused considerable reduction in larvae. Most of first generation emerged at this time. If dry weather continues there will be definite reduction of second-generation weevils which should start emerging by August 1. (Locke). LOUISIANA - Punctured-square counts heavy in scattered fields statewide period ending July 19. Damage levels earlier than usual in some fields. Expect punctured square counts to increase next 10 days. Start control when 25 percent punctured squares observed. (Tynes et al.). In Madison Parish, 28 weevils recovered from 190 wing traps; total to date 5,040. Punctured squares averaged 8.8 percent in 8 of 15 fields. Infestations in 84 of 96 plots checked. (Cleveland et al.).

MISSISSIPPI - A. grandis infestations ranged 2.3-21 percent in 87 fields checked in Noxubee, Chickasaw, Monroe, Holmes, Sharkey, and Washington Counties; 1-13 in 9,400 acres checked in Coahoma, Quitman, Tallahatchie, Grenada, Yalobusha, and Calhoun Counties. (Sartor). In delta counties, punctured squares averaged 19.2 percent in 4 of 6 fields. Some fields treated. Collected 2 weevils in pheromone-baited wing traps in Washington County. (Pfrimmer et al.). GEORGIA - Light to heavy in southern area. (Womack, July 17). Punctured squares averaged 16 percent in treated plots, 45 percent in untreated plots in Spalding County. (Tippins). NORTH CAROLINA - Punctured bolls ranged 0-30 percent and 70-80 percent of bolls dropped in 20 acres of cotton near Pembroke, Robeson County. Crop in maximum fruiting stage. (Johnson).

BOLLWORMS (Heliothis spp.) - NEW MEXICO - Light and spotty in cotton surveyed in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - In McLennan and Falls Counties, eggs averaged 7 (maximum 15.7) and larvae 8.9 (maximum 22) per 100 terminals in 9 treated fields. Eggs averaged 1.2 (maximum 10) and larvae 0.4 (maximum 4.6) per 100 terminals in 32 untreated fields. Damaged squares averaged 7 percent in 9 treated fields; averaged 0.6 percent in 32 untreated fields. (Cowan et al.). OKLAHOMA - Light (0-6 per 100 plants) in Harmon, Tillman, Jackson, Caddo, and Grady Counties. (Okla. Coop. Sur.). ARKANSAS - Moth flights decreased on sugar lines, but increased again in Pulaski and Jefferson Counties. Egg laying expected to continue at low levels. Little treatment necessary except for upper Arkansas Valley and Pulaski County where moth flights have been heavy. (Boyer et al.). LOUISIANA - *Heliothis* spp. eggs and small larvae in many fields throughout Red River Valley period ending July 19. Predators in some fields not controlling infestations. Start control when larval counts 5 per 100 terminals. Expect infestations in northeast soon. (Tynes et al.). In Madison Parish, damaged squares averaged 1.7 percent in 60 of 96 plots. Eggs averaged 3.2 per 100 terminals in 47 of 96 plots, no larvae. (Cleveland et al.). MISSISSIPPI - Percent infestation ranged 1-10 in 88 fields checked in Noxubee, Holmes, Monroe, Chickasaw, Sharkey, and Washington Counties; 1-5 in 9,400 acres in Coahoma, Quitman, Tallahatchie, Grenada, Yalobusha, and Calhoun Counties. (Sartor). In delta counties, eggs averaged 0.5 per 100 terminals in 4 of 6 fields, no larvae. Damaged squares averaged 0.75 percent in 3 of 6 fields. *H. zea* moth collections in light trap increased, no increase in egg laying yet. (Pfrimmer et al.).

TENNESSEE - *Heliothis* spp. increasing. Counts ranged 1-13 larvae or eggs per 100 terminals. Most infestations below control levels but further increases expected. (Locke). GEORGIA - Light to heavy in southern areas. (Womack, July 17). Damaged squares less than one percent in Spalding County. (Tippins). SOUTH CAROLINA - Egg deposition statewide generally much lower than expected for time of year. (Sparks).

WEBWORMS (*Loxostege* spp.) - OKLAHOMA - Heavy and damaging young cotton in some fields in Jackson County and in many fields in Washita County. (Okla. Coop. Sur.).

TOBACCO

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - KENTUCKY - Adult damage light on tobacco in Graves County; less than 10 percent of foliage lost. (Barnett).

SUGAR BEETS

SUGARBEET ROOT MAGGOT (*Tetanops myopaeformis*) - WYOMING - In Park County, maggots ranged 0-31 (averages ranged 8-22) per beet near Powell; ranged 0-24 (averages ranged 3-22) per beet in Willwood area; ranged 0-58 near Hart Mountain. In two other areas in Park County counts ranged 0-44 and 30-83. Highest count was 91 per beet. (Burkhardt).

MISCELLANEOUS FIELD CROPS

YELLOWSTRIPED ARMYWORM (*Spodoptera ornithogalli*) - OKLAHOMA - Larvae (several stages) damaging mungbeans (average height 6 inches) in Kingfisher and Garfield Counties. One or more larvae present on 90 percent of plants in many fields. (Okla. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

GREEN PEACH APHID (*Myzus persicae*) - MICHIGAN - Found in several potatofields in Bay County. Growers should be spraying. Also found in several fields of peppers. (Cress). DELAWARE - Increase light on sweet peppers compared to last week. First apterous adults on peppers. (Burbutis, Lesiewicz). NEW JERSEY - Heavy and damaging foliage of potato planting near Lumberton, Burlington County. (Ins.-Dis. Newsltr.).

COLORADO POTATO BEETLE (*Leptinotarsa decemlinenta*) - UTAH - Still infesting some potatoes and tomatoes in northern area, but much less serious than earlier in season. (Knowlton).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - WYOMING - Adults, eggs, and larvae on beans in Torrington area, Goshen County. Controls underway. (Burkhardt).

LYGUS BUGS (Lygus spp.) - COLORADO - Heavy on beans in Eaton area of Weld County. Controls applied. (Urano).

BEAN THRIPS (Caliothrips fasciatus) - COLORADO - Common in beans in Delta, Montrose, and Mesa Counties. Controls applied. (Bulla).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - COLORADO - Reported on beans in Johnstown area of Weld County; some control necessary. (Urano).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Infestation found July 20 on Interstate Highway 295 at Gloucester and Salem County line. (Ins.-Dis. Newsltr.).

SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) - NEVADA - Collected on asparagus at Reno, Washoe County, for a new county record. (Bechtel).

CABBAGE LOOPER (Trichoplosia ni) - VIRGINIA - Moths increased night of July 18 in light trap at Painter, Accomack County, on Eastern Shore; 49 collected. (Hofmaster).

DETECTION

New State Records - In PENNSYLVANIA, a PLATYGASTERID WASP (Platygaster obscuripennis) Sullivan County, a EURYTOMID WASP (Eurytoma obtusiventris) York County. (p. 553). GYPSY MOTH (Porthetria dispar) DISTRICT OF COLUMBIA. (p. 554). A MOSQUITO (Aedes abserratus) MARYLAND - Garrett County. (p. 552).

New County, Island, Parish, and Independant City Records - An ADELGID (Pineus pini) HAWAII - Maui (p. 555). ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) MISSOURI - Boone (p. 551). GYPSY MOTH (Porthetria dispar) MARYLAND - Calvert, Dorchester, Howard, Prince Georges, Anne Arundel, Charles, Talbot; VIRGINIA - Hampton (p. 554). HOLLYHOCK WEEVIL (Apion longirostre) VIRGINIA - Giles; KANSAS - Wallace (p. 550). JAPANESE BEETLE (Popillia japonica) ALABAMA - Morgan; GEORGIA - Elbert, Oglethorpe; SOUTH CAROLINA - Barnwell; KENTUCKY - Bullitt, Casey, Cumberland, Hardin (p. 554). A LYGAEID BUG (Neacoryphus bicrucis) HAWAII - Molokai (p. 555). An EARWIG (Labidura riparia) CALIFORNIA - Kern (p. 550). SOYBEAN CYST NEMATODE (Heterodera glycines) LOUISIANA - Concordia; ILLINOIS - Williamson (p. 555). SPOTTED ASPARAGUS BEETLE (Crioceris duodecimpunctata) NEVADA - Washoe (p. 548). SWEETCLOVER APHID (Therioaphis riehmi) IDAHO - Kootenai, Bonner (p. 545).

Weather of the week continued from page 540.

70's and 80's from the eastern edge of the northern and central Great Plains to the northern and middle Atlantic coast. The maximum temperature at Amarillo, Texas, Monday afternoon was 71°, this being 26° cooler than Sunday's maximum of 97°. Early morning minimums dropped to the 50's over the northern border States. Warm humid weather continued in the Southeast with maximums mostly in the 90's, but dropping to the 80's by Wednesday. The weekend brought a continuation of warm weather to the Far West with maximums in the 90's at most locations, but reaching 100° at spots. The southwestern deserts warmed to 108° to 112° or higher each afternoon. Afternoon readings in the 90's were common over the Deep South, where high humidity added to the discomfort of the citizens. The Northeast continued relatively cool and pleasant. Weekly average temperatures were above normal from the Pacific coast to the Great Basin and in southern Florida. The rest of the Nation averaged cooler than normal.

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - WEST VIRGINIA - Fruit stings and foliage injury noted in several sprayed orchards and heavy damage observed in unsprayed blocks in Berkeley County. (W. Va. Ins. Sur.). OREGON - Observed 3 newly emerged adults at light adjacent in West Salem, Polk County, July 20. First second-brood moths of year. (Westcott). CALIFORNIA - Infesting apple fruit, one larva per apple, in one-acre planting in Bakersfield, Kern County; general in apple fruit at Hanford, Kings County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - COLORADO - Adults increasing in attractant traps; ranged 10-60 per trap in some orchards in Mesa County, particularly in Vineland and Palisade areas. Controls advised for high recovery orchards. (Bulla, Anderson).

APPLE MAGGOT (Rhagoletis pomonella) - MAINE - Adult emergence and oviposition punctures very evident and increased in Kennebec County. All orchards need protection. (Gall). CONNECTICUT - Emergence tripled at New Haven, Glastonbury, and Storrs. Light in other areas probably due to dry conditions. Should increase rapidly now that ground crust softened. (Savos). NEW YORK - Hatch increasing in Monroe and Orleans Counties. (N.Y. Wkly. Rpt., July 19). MICHIGAN - No systematic pattern of emergence in State. (Thompson).

CHERRY FRUIT FLY (Rhagoletis cingulata) - MICHIGAN - Larvae first recovered from fruit samples collected in Antrim County July 19, Benzie County July 16, Grand Traverse County July 19, and Leelanau County July 13. (Hanna).

WHITE APPLE LEAFHOPPER (Typhlocyba pomaria) - MICHIGAN - Eggs should hatch soon. Serious outbreaks and problem situations can be anticipated in orchards where first generation poorly controlled. (Thompson).

PEARSLUG (Caliroa cerasi) - UTAH - Injury to cherry foliage increasing in Box Elder County; occasionally severe. (Lindsay). PENNSYLVANIA - Damage moderate to Japanese cherry and sweet cherry trees in Crawford and Mercer Counties. Pupation underway July 19; second-generation adults expected last week of July. (Adams).

SPIDER MITES - UTAH - Tetranychus mcdanieli (McDaniel spider mite) and Tetranychus spp. increasing in apple and pear orchards in many areas. Populations severe in Washington County apple orchards (Huber); building up rapidly throughout northern areas (Davis). COLORADO - T. urticae (twospotted spider mite) caused leaf injury in certain pear orchards in Mesa County. Populations light to moderate in pear and apple orchards in county. (Bulla). SOUTH CAROLINA - T. urticae apparently peaked, now declining on apples and ornamentals. (Nettles). NEW JERSEY - Panonychus ulmi (European red mite) continued to increase in many blocks; light to moderate leaf bronzing apparent. Typhlodromus fallacis (a phytoseiid mite), a predacious species, present in most of same blocks. (Ins.-Dis. Newsltr.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Four flies taken July 21 at Garden Valley, Douglas County, one in each of 4 traps in walnut orchard. First report of fly emergence in State. Last year, flies first found in Douglas County July 22. (Passon).

CITRUS

Insect Situation in Florida - Mid-July - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 85 (norm 58) percent of groves; economic in 68 (norm 34) percent. Population on leaves and fruit highest for mid-July in 20 years of record. Leaf population will decrease late in July, fruit population will increase through July and decrease in August. Statewide population will continue to be above normal and very high despite predicted decreases. All districts high. CITRUS RED MITE (Panonychus citri) infested 74 (norm 70) percent of groves; economic in 44 (norm 41) percent. Peak occurred in late June; above normal and in high range. Decrease started early in July and will continue through August, population expected to be low. Highest districts south, west, and north. TEXAS CITRUS MITE (Eutetranychus banksi) infested 90 (norm 76) percent of groves; economic in 71 (norm 53) percent. Population attained summer peak early in July. In high range and much above normal. Decrease to low level expected in August. All districts high. GLOVER SCALE (Lepidosaphes gloverii) infested 82 (norm 80) percent of groves; economic in 20 (norm 29) percent. Decreased and now below normal. Expected to drop out of high range in July and continue to decrease to low level in August. Highest districts south and west. PURPLE SCALE (L. beckii) population near normal and in moderate range with slight decrease expected. Highest district south. BLACK SCALE (Saissetia oleae) infested 69 (norm 85) percent of groves; economic in 42 (norm 65) percent. Population entered high range but below normal. Little change expected. Highest districts east, south, and central. CHAFF SCALE (Parlatoria pergandii) infested 50 (norm 66) percent of groves; economic in 1 (norm 13) percent. YELLOW SCALE (Aonidiella citrina) infested 42 (norm 66) percent of groves; economic in none (norm 11) percent. These two scales below normal abundance and expected to occur only as light infestations. Populations will remain low to moderate in all districts. An ARMORED SCALE (Unaspis citri) infested 28 percent of groves; economic in 20 percent. Increased in early July and is higher than in July of any prior year. Slight decrease expected. WHITEFLIES infested 79 percent of groves; economic in 22 percent. Population in high range and slightly above normal. Temporary increase expected. Highest districts east and west. MEALYBUGS infested 64 percent of groves; economic in 22 percent. Population attained annual peak of abundance at moderate level and much below normal. Decrease expected. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL GRAINS

GRAPE BERRY MOTH (Paralobesia viteana) - MICHIGAN - Second-generation moths in pheromone traps since July 14. Eggs also found on grape berries. Control measures in problem vineyards should start within 10-14 days of first emergence or no later than July 28. (Thompson).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - UTAH - Severe on grape foliage in all Washington County vineyards. (Huber).

GRAPE LEAFHOPPER (Erythroneura comes) - IDAHO - Heavy on grapes throughout Canyon County. Control necessary in many cases. (Homan).

ORNAMENTALS

HOLLYHOCK WEEVIL (Apion longirostre) - VIRGINIA - Adults on hollyhock in Giles County. Determined by W.A. Allen. This is a new county record. (Straley, July 3). KANSAS - Found on hollyhock in nursery in Wallace County. Determined by M. Shuman. This is a new county record. (Bell).

AN EARWIG (Labidura riparia) - CALIFORNIA - Adults infesting soil around residence in Bakersfield, Kern County. This is a new county record. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

A SATURNIID MOTH (Coloradia pandora lindseyi) - OREGON - Moth flight began July 13, now heavy in lodgepole pine stand east of Newberry Crater on Deschutes National Forest in Deschutes County. Areas heavily defoliated during late August or early September 1970. (Orr).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Aerial surveys with follow-up ground surveys completed April 30, revealed 78±55 infested trees per 1,000 acres of host type; considered heavy infestation. General infestation located primarily in Cherokee County between Murphy and Andrews. (USFS).

EASTERN SPRUCE GALL APHID (Adelges abietis) - WEST VIRGINIA - Galls on 20 percent of trees in one-acre block of Norway spruce in Greenbrier County and 70 percent of trees in 2-acre block in Pocahontas County. (W. Va. Ins. Sur.).

REDHEADED PINE SAWFLY (Neodiprion lecontei) - MICHIGAN - Currently found in instars 2-5, feeding on pines generally shorter than 15 feet in plantations and where pine exists in understory position. (Sauer).

ELM LEAF BEETLE (Pyrrhalta luteola) - KANSAS - Second generation mostly pupated at Topeka, Shawnee County; many Chinese elms show severe damage. (Bell). COLORADO - Damage becoming heavy; defoliation 100 percent on untreated trees. (Sisson). NEW MEXICO - Larvae heavy, 2-3 per leaf, on Siberian elms scattered throughout Las Cruces, Dona Ana County. (Hare).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - MISSOURI - Light to moderate throughout central and south-central areas. Defoliation of smaller oaks common in infested areas. (Gass). Adults collected by W.S. Craig at Columbia, Boone County, for a new county record. (Munson).

SATIN MOTH (Stilpnotia salicis) - OREGON - Large numbers of adults at storefronts in Prineville, Cook County, morning of July 17, indicate heavy flight night of July 16. (Westcott). Larvae stripped many untreated trees and shrubs in Prineville, especially willows, this spring. First large moth flight noted week of July 9; subsequent heavy flights resulted in large numbers on sidewalks. Flights decreased this period. This is unusually heavy infestation, estimated to be 25-50 times heavier than 1970. (Bunch).

CALIFORNIA OAKWORM (Phryganidia californica) - OREGON - Apparently caused much leaf damage to chinquapin oak in several areas of Douglas and Lane Counties. Single pupa found attached to leaf near Fern Ridge Reservoir, Lane County, (Kline).

FALL WEBWORM (Hyphantria cunea) - ARKANSAS - Active in northeast area. Webs up to 3 feet in diameter on persimmon and other hosts. Defoliation of persimmon complete in some cases. Species becoming active in northwest, but about 3 weeks later than normal. (Boyer). NEW MEXICO - Light and spotty with 1-5 tents per poplar tree at Las Cruces, Dona Ana County. (Hare).

WALNUT CATERPILLAR (Datana integerrima) - ARKANSAS - Continues to defoliate walnut trees in northwest and west-central areas. (Boyer).

A NOTODONTID MOTH (Symmerista canicosta) - MICHIGAN - No adults in blacklight trap in Wellston indicates egg laying completed. Less than 10 percent of eggs unhatched; will hatch within 7 days. Egg parasitism low (about 2-3 percent). Predation of early instars by stink bug nymphs heavy. Defoliation expected to be severe over large portion of Manistee National Forest. (Eiber).

A GRASSHOPPER (Dendrotettix quercus) - MISSOURI - Heavy populations defoliated some oak and hickory in south-central area. Mating underway. (Gass).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 8 cases reported in U.S. July 18-25: TEXAS - Bowie 4, Kimble 1, Kinney 1, Starr 1; ARKANSAS - Little River 1. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - VERMONT - Major annoyance on warm days in Chittenden County. (Nielsen). MARYLAND - Ranged 5-15 per head on sprayed horses and cattle, 35-80 per head on unsprayed livestock in Frederick, Howard, Carroll, and Montgomery Counties. (U. Md., Ent. Dept.). NORTH DAKOTA - Economic, ranged 8-35 (averaged 18) per face on calves in sandhills area of Ransom County. (Brandvik).

SOUTH DAKOTA - Peak populations annoying cattle. (Jones). IDAHO - Adults averaged 35 per face on 1,700 head of cattle in Porthill area of Boundary County. Pinkeye spreading in cattle. (Studer).

HOUSE FLY (Musca domestica) - INDIANA - Adults heavy in stables where manure permitted to accumulate in Tippecanoe County. (Dobson). OKLAHOMA - Ranged up to 14 per Scudder grid in untreated barns in Payne County, most counts averaged 7 or less per grid. (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - FLORIDA - Averaged 80 per animal on beef cattle at Williston, Levy County. (Head). Unusually light for time of year. (Butler). MISSISSIPPI - Average counts per animal by county: Holmes 260 on 300 head; Hinds 18 on 211 head; Monroe 75 on 500 head; Washington 20 on 250 head. (Sartor). MARYLAND - Ranged 60-200 per head on dairy and beef cattle in Dorchester County. Below normal in Frederick, Baltimore, Carroll, Howard, Montgomery, and Washington Counties where counts ranged 0-20 per head. Most central county herdsmen applying controls to prevent buildup. (U. Md., Ent. Dept.). VERMONT - Continues to increase. (Nielsen). SOUTH DAKOTA - Populations at peak and annoying cattle. (Jones). WYOMING - Ranged 30-40 per side on cattle west of Laramie, Albany County. (Spackman). IDAHO - Averaged 350 per side on 300 head of cattle in Porthill area of Boundary County. (Studer). UTAH - Heavy on some Washington County cattle herds. (Huber). Many small herds in northern areas apparently treated. (Knowlton). OKLAHOMA - Ranged 200-300 per head on cattle in Payne County. Heavy in Cotton County, moderate in Cleveland and Atoka Counties. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Severe annoyance to cattle reported in Rock, Calumet, Sauk, and Iowa Counties. (Wis. Ins. Sur.). MARYLAND - Ranged 5-25 per head of livestock in central area. Controls applied in all areas. (U. Md., Ent. Dept.).

MOSQUITOES - MARYLAND - Aedes absserratus collected April 30, 1971, near Fingel, Garrett County, by W.E. Bickley. Also collected May 5, 1971, at same location by S.P. Joseph and J. Mallack. Determined by W.E. Bickley. This is a new State record. Larvae found in cranberry swamp in association with A. canadensis. (U. Md., Ent. Dept.). MICHIGAN - Snow pool mosquitoes still most serious pests in State parks but collections indicate other species becoming numerous and can be expected to be increasingly important through rest of summer. (Newson). WISCONSIN - Heavy and localized near permanent wetlands in all areas of State. A. cinereus remains dominant biter at sites checked. Heavy rainfall in some areas and dry conditions in others largely responsible for considerable variation in populations among counties. (Wis. Ins. Sur.). MINNESOTA - A. vexans in 431 of 625 larval collections, Culex tarsalis in 73. A. vexans dominant in evening bite collections; accounted for 58 percent of daytime collections. Light trap catches totaled 6,984 females; 77 percent A. vexans, 13 percent Coquillettidia perturbans, and 1 percent Culex tarsalis. As predicted, trap catches increased substantially July 19 and 20. This very heavy brood came from rains which fell July 7. Nuisance levels expected to remain high 14 days. (Minn. Ins. Rpt.). SOUTH DAKOTA - Annoying cattle. (Jones). WYOMING - Counts ranged 5-6 to as high as 225 per side on cattle west of Laramie, Albany County. (Spackman). UTAH - A. nigromaculis problem in parts of Salt Lake City, South Salt Lake, and Magna areas of Salt Lake County. (Roberts). Culex tarsalis increased rapidly, but populations of Aedes spp. low for Weber County. (Frank). Mosquitoes troublesome throughout Cache County (Knowlton), annoyance moderate in Sanpete County (Herring). Mosquitoes serious problem along Virgin River, especially troublesome at Hurricane and Bloomington. (Huber).

Venezuelan Equine Encephalomyelitis Outbreak in Texas - This virus disease affects horses, mules, donkeys, and man. The mortality rate in horses is high but relatively low in man. The disease in man is flu-like. This virus was first recorded in 1938 from Venezuela, but has spread through Central America and into Mexico where the current loss of horses is estimated in the thousands. Confirmation of this virus in Texas was made during July 1971. It has been estimated that about 1,200 horses had been lost as of July 22 in Texas. Federal and State quarantines have been invoked to restrict movement of horses and other equines into and out of Texas and other affected areas of the U.S. A combination vaccination and insect control program is underway by State, Federal, and local personnel. About 8 million acres are to be sprayed in Texas and Louisiana with malathion and naled to control suspected vectors. Several species of mosquitoes and possibly other Diptera are suspected vectors. (Anim. Health Div.).

BENEFICIAL INSECTS

A PLATYGASTERID WASP (Platygaster obscuripennis) - PENNSYLVANIA - About 20 adults emerged from 2 willow terminal twig galls caused by Rhabdophaga salicistriticoides (a cecidomyiid midge). Galls collected at La Porte, Sullivan County, February 15, 1971, by G.B. Sleesman. R. salicistriticoides determined by R.J. Gagne. P. obscuripennis determined by P.M. Marsh and is a new State record. (Kim).

A EURYTOMID WASP (Eurystoma obtusiventris) - PENNSYLVANIA - Adult emerged from golden rod gall caused by Eurosta solidaginis (a tephritid fly). Gall collected at Gifford Pinchot State Park, York County, March 21, 1971, by G.B. Sleesman. E. solidaginis determined by R.J. Gagne, E. obtusiventris determined by B.D. Burks and is a new State record. (Kim).

BUMBLEBEES - OHIO - Workers of Megabombus auricomus, M. pennsylvanicus, and Pyrobombus bimaculatus observed foraging on red clover in Highland County July 20. Males of P. griseocollis emerged in Highland County. Queens of M. auricomus and workers of M. auricomus, P. bimacultaus, P. impatiens, and P. vagans captured on red clover in Greene County. (Andress).

BRACONIDS - ARIZONA - Averaged 20 per 100 sweeps in alfalfa and heavy on other crops in Cochise County. (Ariz. Coop. Sur.).

LADY BEETLES - ARKANSAS - Hippodamia convergens (convergent lady beetle) outnumbers Coleomegilla maculata in sorghum and alfalfa throughout State. Adults but no eggs, larvae, or pupae found in sorghum and alfalfa in northwest area. (Boyer). ARIZONA - Unspecified lady beetles averaged 25 per 100 sweeps in Cochise County alfalfa. Heavy on other crops. (Ariz. Coop. Sur.).

A FLOWER BUG (Orius insidiosus) - ARKANSAS - Adults very active in blooming sorghum in all areas; however, number of nymphs lower than in past years. (Boyer).

DAMSEL BUGS - ARIZONA - Averaged 60 per 100 sweeps of alfalfa in Cochise County; heavy throughout county on other crops. (Ariz. Coop. Sur.).

LACEWINGS - ARIZONA - Averaged 15 per 100 sweeps of alfalfa in Cochise County; heavy on other crops. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Infestations light and scattered in control zone. Light below Caprock in Hall, Dickens, and Kent Counties; confined to early planted irrigated fields. To date, one weevil detected in cotton above Caprock. (Rummel, July 19). For Boll Weevil in other areas see page 546.

GRASS BUGS - UTAH - Labops utahensis discoloring grasses in Huff Creek area near Upton, Summit County. (Knowlton, Moore). Irbisia spp. largely disappeared from crested wheatgrass in Curlew Valley, Box Elder County. (Knowlton).

GRASSHOPPERS - WASHINGTON - Melanoplus sanguinipes, M. packardii, and Oedaleonotus enigma dominant. About 15,000 acres of cheatgrass infested from Fishhook Park to Burbank in Franklin County. Ranged 10-15 per square yard, 90 percent adults. Area adjacent to newly irrigated farmland. Problems may develop as range dries and grasshoppers move into cropland. M. femurrubrum and M. sanguinipes caused severe damage to drying rangeland from Asotin toward Grande Ronde River. Nymphs at higher elevations, adults along river. (PPD). NEVADA - *Melanoplus sanguinipes* adults ranged 20-35 per square yard on 10,000+ acres of rangeland including abandoned fields in Diamond Valley, Eureka County. Egg laying should start in about 7 days. Adjacent alfalfa and other crops heavily damaged although 1,200 acres of cropland treated. *Oedaleonotus enigma*, *Aulocara elliotti*, *M. packardii*, and *M. sanguinipes* averaged 17 per square yard on 10,000 acres of rangeland in Crescent Valley, Eureka County. During period July 1-17, treatments applied to 4,900 acres of crested wheatgrass infested with *O. enigma* and *M. sanguinipes* and 5,000 acres, mostly alfalfa but some grain, infested with *M. bivittatus* and *M. sanguinipes* in Kings River Valley, Humboldt County. (Wilson). *O. enigma* averaged 20 per square yard on 100 acres of rangeland at Orovada, Humboldt County. (Rowe). KANSAS - Unspecified nymphs averaged about 20 per square yard along border of alfalfa field north of Frankfort, Marshall County; defoliation about 30 percent. (Bell). WYOMING - About 15,000 acres sprayed in Big Horn area. (Spackman). NORTH DAKOTA - Grasshoppers moved from alfalfa stubble to wheat and flax in Ransom County. Damage to small grain evident with 50 percent of leaves stripped in wheat, light boll clipping in flax. Grasshoppers ranged 6-8 per square yard in wheat and flax, up to 20 per square yard in alfalfa stubble. *M. bivittatus*, *M. sanguinipes*, and *M. packardii* dominant. (Brandvik). MINNESOTA - Grasshoppers ranged 25-36 per square yard along U.S. Highway 75 in northern Wilkin County; 10-15 in Clay County. Adjacent grain with only few grasshoppers, no apparent damage. Mostly *M. bivittatus*, many adults. In Goodhue County, 4 miles south of Cannon Falls, counts ranged 18-45 per square yard along roadsides, 18-27 per square yard in adjacent alfalfa field. *M. femurrubrum* dominant, in third and fourth instars. *M. bivittatus*, *M. sanguinipes*, and *Chorthippus curtipennis* present. Damage light. (Minn. Pest Rpt.). IOWA - Ranged 10-50 per square yard in fencerows and roadsides; *M. differentialis*, *M. femurrubrum*, and *M. sanguinipes* dominant. Infestations similar in western and eastern thirds of State. (Iowa Ins. Sur.).

GYPSY MOTH (*Porthetria dispar*) - NEW YORK - Males in Dutchess and Ulster County blacklight traps July 10-11. Defoliation about 35 percent on oaks in portions of Ulster County. (N.Y. Wkly. Rpt.). MARYLAND - Specimens trapped in Calvert, Dorchester, Howard, Prince Georges, Anne Arundel, Charles, and Talbot Counties for new county records; VIRGINIA - Specimens trapped at Hampton for Independent City record; specimens trapped in Washington for a new District of Columbia record. Determinations by E. L. Todd. (PPD). SOUTH CAROLINA - Adult traps checked at camping sites along Lake Marion, negative. (Langford).

JAPANESE BEETLE (*Popillia japonica*) - Adults collected as follows: ALABAMA - Morgan County; GEORGIA - Elbert and Oglethorpe Counties; SOUTH CAROLINA - Barnwell County; KENTUCKY - Bullitt, Casey, Cumberland, and Hardin Counties. Determined by R.D. Gordon. These are new county records. (PPD). VIRGINIA - Damaged up to 10 percent of silks in several cornfields in King and Queen County. (Allen). Infestations very heavy in Prince Edward County for fourth consecutive year; current infestation worst to date. Damaging wide variety of crops. (Peery). WEST VIRGINIA - Caused heavy damage to one-acre block of pin oak in Mercer County nursery. (W. Va. Ins. Sur.). MARYLAND - Adults continue to feed on silks and foliage of corn in several areas of Queen Annes, Caroline, Kent, and Talbot Counties. Percent infestation ranged 4-20 in several fields. (U. Md., Ent. Dept.). PENNSYLVANIA - Population during first half of July at highest level in over decade. Problem appears general statewide. Foliage damage evident on numerous hosts. (Adams). OHIO - Adult emergence near peak in eastern areas. (Rose). Adults, 1 per 5 plants, feeding on tassels and silks of field corn in Ross County. (Andress).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Sterile moths released, 2,517,000 at Bakersfield, Kern County; season total 48,192,250 as of July 22. No native moths taken in area during 19 weeks traps have been operated this season. (PPD).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - LOUISIANA - Cysts taken in Concordia Parish for new parish record; ILLINOIS - Cysts taken in Williamson County for new county record. Determinations by A. M. Golden. (PPD). TENNESSEE - Continues to stunt soybeans in all western areas. (Gordon).

HAWAII INSECT REPORT

Turf and Pasture - GRASS WEBWORM (*Herpetogramma licarsisalis*) larvae light (less than 0.33 per square foot) in 40 acres of Kikuyu grass pasture at Hana, Maui; damage light and spotty. Adults of *Casinaria infesta* (an ichneumon) moderate. (Miyahira).

General Vegetables - SOUTHERN GREEN STINK BUG (*Nezara viridula*) adults averaged 3-4 per plant on long beans at Ewa, Oahu. Eggs of *Trichopoda pennipes* var. *pilipes* (a tachina fly) on all *N. viridula* adults. (Au). All stages of CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) moderate in 2 small plantings of bell peppers at Anahola, Kauai. (Ikehara).

Ornamentals - Adults of a BARK BEETLE (*Xylosandrus compactus*) heavy, 20 on 2 branch tips 8 inches long, on magnolia at Manoa, Oahu. (Mitchell).

Forest and Shade Trees - Nymphs and adults of a CONIFER APHID (*Cinara carolina*) generally light in 8 acres (3,000 trees) of loblolly pine (*Pinus taeda*) at Olinda, Maui. About 50 percent of trees infested. Aphids ranged 5-25 per terminal on 30 percent of infested trees. Light terminal dieback occurred from heavy infestation 4 months ago. Adults of *Coelophora inaequalis* (a lady beetle) 3 per terminal amid aphids. (Miyahira). Nymphs and adults of an ADELGID (*Pineus pini*) on *Pinus* sp. at 1,219 meters at Olinda, Maui. This is a new island record. (Miyahira). Larvae and adults of a NOCTUID MOTH (*Melipotis indomita*) light to moderate on monkey pod trees at Halawa, Oahu, at Lahaina, Maui, and at Koloa, Kauai. At Halawa, monthly adult catches in light traps as follows: May 433, June 162, and July (first 21 days) 56. Larvae 3-25 per tree under bark of 6 trees at Halawa. Damage to new foliage moderate on 3 of 12 trees at Lahaina. Defoliation 80-90 percent on 3 trees at Koloa. (Au et al.).

Beneficial Insects - Larvae and adults of a GORSE WEEVIL (*Apion ulicis*) heavy on gorse in forest reserve at Olinda, Maui. About 84 percent of mature seed pods heavily infested on scattered gorse clumps bordering pine trees. (Miyahira). Adults of a SCARAB (*Copris incertus prociduus*) moderate to heavy at lights at Kahakuloa and Makawao, Maui. This species purposely introduced to aid in control of *Haematobia irritans* (horn fly). (Tamura).

Miscellaneous Pests - Adults of a LYGAEID BUG (*Neacoryphus bicrucis*) moderate on flowers of *Erigeron* sp. and *Pittosporum* sp. at Damiloa, Molokai. This is a new island record. (Davis). Adults of a MIRID BUG (*Pycnoderes quadrimaculatus*) numerous in fruit fly trap baited with trimedlure at Kau, Hawaii. (Nakagawa).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	BL = blacklight I = incandescent MV = mercury vapor O = other Type of trap	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 7/16-22			BL					6		37						7			1	8	2	3		
IOWA																								
Dubuque 7/9-19			BL	17			46										15	61	103					
Kanawha 7/12-20			BL	91			76										4	218	126					
KANSAS																								
Great Bend 7/11-21			BL	5			31			59						14		5	66		6	22	1	
Tribune 7/13, 16, 20			BL				2										2	2	7		1		5	
MINNESOTA																								
Shakopee 7/13-19			BL																1					
Worthington 7/13-19			BL														1		27					
MISSISSIPPI																								
Stoneville 7/16-22	63-100	2.29	BL	4				28		386					1	1			31		22	49	1	
MISSOURI																								
Pemiscot 7/16-22			BL	4						149							149	2	34		19	13		
Platte 7/16-22			BL	6						2						2	18	11	9			39		
NEBRASKA																								
Aurora 7/15			BL	29			1											236	266					
North Platte 7/15, 22			BL	31			7										123	15	10					
NEW HAMPSHIRE																								
Lee 7/20			BL	1															2					
NEW JERSEY																								
Plainsboro 7/14-20			BL	32													10	58	22			6		
Seabrook 7/14-20			BL	120													12	72	602		3	12		
NORTH DAKOTA																								
Bismarck 7/14, 15			BL									28		57				1	10					
Fargo 7/20, 21			BL	1															11					
OHIO																								
Reynoldsburg 7/16-22			BL	22			2											8	40		2			
Wooster 7/16-22			BL	111			6										2	52	237				3	
SOUTH DAKOTA																								
Brookings 7/12-18			BL	27			11										223	40	129				5	
TENNESSEE																								
Fayette 7/19-23			BL	42	1			25	21							3	83	3	117	3		316		
Franklin 7/19-23			BL	11	3				1						1	1	10		18			5	1	
TEXAS																								
Waco 7/15-22	76-99	0.17	BL	14				30										14		33	157	30	126	
VIRGINIA																								
Montgomery 7/16-22			BL	22					1						4	5						5		

Estimates of Damage by the European Corn Borer To Grain Corn in the United States in 1970

Compiled by the Economic Insect Survey and Detection Staff,
PPD, ARS

The loss to grain corn attributed to the European corn borer (Ostrinia nubilalis) in 1970 is estimated to be approximately 195,885,000 bushels in 15 corn-producing States. In these States the loss was 5.38 percent of the production. This loss is approximately 4.76 percent of the total national crop estimated at 4,109,792,000 bushels. 1/ The value of the loss, based on the season average prices received by farmers for corn 2/, is $250,178,000. These loss estimates are only for the States shown in Table 1, and are based on the counties or districts surveyed during the fall of 1970 within these States. 3/

Table 1 is a composite of State and Federal estimates. These estimates were prepared by using production data 1/, and prices received 2/, released by the Statistical Reporting Service. The basis for the loss estimates was determined by the survey of European corn borer populations during the fall of 1970. 3/ The index of 3 percent loss per borer per plant was used to compute the loss in bushels.

Estimated losses to grain corn for the past 19 years in States where the fall abundance survey was conducted are as follows:

1970	195,885,000	Bushels	$250,178,000
1969	163,501,000	"	182,509,000
1968	154,554,000	"	161,287,000
1967	59,661,000	"	63,837,000
1966	121,236,000	"	155,876,000
1965	54,318,100	"	59,374,160
1964	87,116,000	"	97,478,000
1963	120,647,000	"	127,838,000
1962	88,245,000	"	93,695,000
1961	65,044,000	"	68,998,000
1960	102,991,000	"	96,085,000
1959	67,763,000	"	71,979,000
1958	100,699,000	"	98,434,000
1957	180,897,000	"	158,841,000
1956	97,971,000	"	119,535,000
1955	155,355,000	"	182,579,000
1954	191,614,000	"	261,415,000
1953	90,000,000	"	125,466,000
1952	53,270,000	"	77,205,000

1/ Crop Production, 1970 Annual Summary by States, Crop Reporting Board, Statistical Reporting Service, USDA, December 18, 1970.

2/ Crop Values, Season Average Prices Received by Farmers and Value of Production 1969 and 1970 - by States, Crop Reporting Board, Statistical Reporting Service, USDA, December 29, 1970.

3/ Cooperative Economic Insect Report 21(5):47-54, 1971.

Table 1. Estimates of Damage by the European Corn Borer to Corn Grown for Grain in the United States in 1970

State	Districts Included 1/	Total State Production	Estimated Data			
			Value per Bushel	Value of Production	Loss of Crop	
	Number	1,000 Bu.	Dollars	$1,000	1,000 Bu.	$1,000
Arkansas	3	1,575	1.43	2,252	4	5
Delaware	1	13,690	1.46	19,987	1,270	1,854
Illinois	7	744,884	1.37	1,061,591	15,272	20,923
Indiana	12	371,998	1.35	502,197	5,254	7,093
Iowa	12	859,140	1.28	1,099,699	66,439	85,042
Kansas	3	79,670	1.30	103,571	1,771	2,302
Maryland	3	40,172	1.47	59,053	1,598	2,349
Michigan	1	114,076	1.30	148,299	5,173	6,725
Minnesota	7	390,490	1.22	476,398	20,687	25,031
Missouri	7	173,057	1.40	242,280	6,663	9,328
Nebraska	5	367,275	1.27	466,439	52,013	66,058
North Dakota	1	6,500	1.15	7,475	101	116
Ohio	5	232,078	1.35	313,305	5,061	6,832
South Dakota	6	102,336	1.21	123,827	9,556	11,563
Wisconsin	9	143,520	1.35	193,752	4,646	6,272
Totals		3,640,461		4,820,125	195,885	250,178

1/ Cooperative Economic Insect Report 21(5):47-54, 1971

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 August 6, 1971 Number 32

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM larval damage expected to increase in Maryland. Larvae heavy on sorghum and moderate on peanuts in Oklahoma. GREENBUG damaged sorghum in Nebraska, increase expected in western and southern Kansas. Heavy on sorghum in Oklahoma, some heavy populations in Texas Panhandle. Controls applied in Colorado. Building up in Pima County, Arizona. POTATO LEAFHOPPER heavy on alfalfa in Virginia and Maryland, building up in Vermont, some yellowing of alfalfa in Wisconsin. (pp. 561-562).

EUROPEAN CORN BORER potential high for heavy second generation in Minnesota and for damage in Illinois. FALL ARMYWORM troublesome on sorghum in Texas, Oklahoma, and Missouri, and corn in Maryland. (p. 563).

LESSER CORNSTALK BORER heavy in peanuts in Texas. (p. 566).

DOUGLAS FIR TUSSOCK MOTH damaging conifers in Washington. JACK PINE SAWFLY damaged pines in Michigan. (pp. 568-569).

Economic levels of GRASSHOPPERS continue on grasslands in several States. Total of 718,550 acres of rangeland treated in Idaho. (pp. 570-571).

GYPSY MOTH males trapped in Ohio, North Carolina, and Alabama are considered as regulatory incidences at this time. (p. 571).

Detection

New State records include a LONGHORNED BEETLE from Virginia (p. 567) and a SAWFLY from Alabama (p. 569).

For new county and island records see page 567.

Special Reports

State Survey Coordinators. (pp. 574-576).

Cooperative Survey Entomotogists. (pp. 577-578).

Reports in this issue are for week ending July 30 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 2

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Midsummer heat intensified over the Far West. Over mid-America, temperatures in the last week of July were more like those expected in early autumn. Much of the central and eastern portions of the Nation received generous rains.

PRECIPITATION: A polar air mass spilled into mid-America and spread southward and eastward. Tropical gulf air continued to flow northward across Dixie and into the East. Thunderstorms occurred in the warm humid air and along the front that separated the two air masses. Numerous scattered downpours occurred here and there. A downpour of 1.56 inches of rain in 36 minutes Monday afternoon at Albuquerque, New Mexico, caused rock slides and closed roads. Tuesday afternoon, scattered heavy showers occurred from eastern Nebraska to northeastern Texas and also across the Southland to Georgia. More thundershowers fell in Kansas, northeastern Texas, and from Ohio to the lower Mississippi River Valley Wednesday afternoon and evening. Dodge City, Kansas, registered 1.64 inches of rain the 24-hour period ending at 6 a.m. Thursday. Other stations in the Dodge City vicinity received 3 to more than 4 inches and a number of stations in northeastern Texas received 1 to 3 inches or more in the same 24-hour period. Totals exceeding 1 inch were recorded in Kentucky, Tennessee, Mississippi, and Louisiana. Thursday's rains extended from the Rocky Mountains to the Atlantic Ocean. Some totals north of Lufkin, Texas, measured Friday morning exceeded 3 inches. Southern New Hampshire received 2.50-inch rains Thursday and early Friday. Weekend rains covered most of the eastern third of the Nation. The southern Rocky Mountains received light showers Sunday.

TEMPERATURE: Summer heat continued in the Far Southwest. Needles, California, registered 116° Monday and Tuesday afternoons. Warm summer temperatures also persisted in the interior portions of Washington and Oregon, where afternoon temperatures reached the 90's on most days and 100° or higher on 1 or 2 afternoons. Maximums reached the 90's in New Mexico, Texas, along the gulf coast, and on the Florida Peninsula. A large dry, cool, air mass pushed into the North Central States from Canada early in the week. It brought weather more characteristic of September than July. It dropped nighttime temperatures into the 40's and held afternoon readings in the 60's. Parts of Montana and North Dakota cooled to the 30's Monday morning. Big Piney, Wyoming, registered 36° Tuesday morning and Sheridan, Wyoming, recorded 35° Thursday. This is the coldest July temperature of

Weather of the week continued on page 572.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Larvae of this species and Spodoptera frugiperda (fall armyworm) found in coastal pastures. S. frugiperda dominant. (Green). MINNESOTA - Few P. unipuncta larvae feeding on corn in widely scattered fields in southeast, south-central, and southwest districts. Noneconomic in corn. (Minn. Pest Rpt.). MICHIGAN - No immediate danger apparent; blacklight collections at all stations below normal for time of year. (Newman).

ARMY CUTWORM (Euxoa auxiliaris) - WASHINGTON - Larvae of this species and Peridroma saucia (varigated cutworm) causing extensive and increasing damage to fruit and foliage of apple and pear in Yakima County. P. saucia infesting old trees above head level and becoming heavy on young trees at Coniche. (Johnson).

ASTER LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Averaged 16 per 10 sweeps on untreated potatoes in Greeley area, Weld County. (Alldredge, Hantsbarger). WISCONSIN - Counts heavy in field of sweet corn in Outagamie County; ranged 30-40 per 10 sweeps in field of mint in southern Jefferson County. Counts in carrots at this site variable; up to 2 per sweep. (Wis. Ins. Sur.).

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Curley top infection of sugar beets ranged 20-80 percent. Infection 100 percent in one small field of table beets, field abandoned. Leafhoppers increasing in thistle stands. In Solvang area of Santa Barbara County curly top incident 6-10 percent. (Cal. Coop. Rpt.). COLORADO - Remains light, ranged 0-4 per 10 square feet of row in western area; incidence of curly top disease very light. (Hantsbarger, Bulla).

CORN EARWORM (Heliothis zea) - DELAWARE - Light moth increase in blacklight traps in Sussex County. (Lesiewicz). MARYLAND - Moths averaged 10 per night at Hurlock, Dorchester County; 5 per night at Snow Hill, Worcester County; and 4 per night at Centreville, Queen Annes County. Larval damage to sweet corn in Queen Annes County ranged 1-4 percent; up to 20 percent in most heavily infested fields on Eastern Shore. Damage levels expected to increase rapidly until end of season. No damage to snap beans, lima beans, and soybeans reported. (U. Md., Ent. Dept.). VIRGINIA - Ear infestation ranged 16-92 percent in southern Tidewater area. Based on 15 samples, 45.9 percent of ears in region infested with second through fifth instars. Survey included Dinwiddie, Sussex, Southampton, Nansemond, Isle of Wight, Surry, and Prince George Counties. (Allen). WISCONSIN - Low numbers of moths appearing in blacklight traps in extreme southern counties. (Wis. Ins. Sur.). KANSAS - All instars noted, 100 percent of ears infested in field of late-silking corn in Stafford County. Larvae (all sizes) averaged 2.3 per ear in one field of late-silking corn in Harvey County. (Bell). ARKANSAS - Few larvae in some fields in southeast areas. Check soybeans carefully. Larvae appearing in sorghum heads in several areas of State, especially in areas where sugarlines show heavy moth flights. Larvae 1-2 per row foot in Lonoke County. Heaviest infestation ranged 5-10 per row foot in Yell County field. (Boyer). OKLAHOMA - Heavy in sorghum in Grady and Oklahoma Counties, moderate in peanuts in Bryan County. (Okla. Coop. Sur.). TEXAS - Populations in grain sorghum have been heavy. Moderate to heavy infestations reported in whorls and developing grain in Knox County. (Boring, Clymer). ARIZONA - Ranged 1-3 per ear of field corn in Cochise County. (Ariz. Coop. Sur.). IDAHO - Tassel damage 5 percent in 5 cornfields at Nampa, Canyon County, July 16. (Homan).

CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Heavy in field of spring barley at Benson, Cache County. (Burtenshaw). COLORADO - Generally light on corn in northeastern areas. Predators active. (Pilcher, Hantsbarger). TEXAS - Decreasing in most areas. Still heavy in scattered fields of young grain sorghum. (Clymer). OKLAHOMA - Moderate on grain sorghum in Beaver, Cimarron, Osage, Grady, and Tillman Counties. (Okla. Coop. Sur.). KANSAS - Populations generally decreasing in sorghum in most areas. Infesting lower leaves of some irrigated sorghum in northwest and west-central districts. (Bell). WISCONSIN - Infestations light to heavy in different fields. Present in whorls and ear tips in heavily infested fields. Counts very heavy on undersides of leaves, light on tassels and in silks in some early fields in central counties. Lady beetle adults, larvae, and eggs evident in some heavily infested fields. (Wis. Ins. Sur.). MARYLAND - Few heavy infestations near Romancoke and Old Point areas of Queen Annes County. Ranged 80-100 percent infested in 200 acres. Most fields on Eastern Shore negative. (U. Md., Ent. Dept.). WEST VIRGINIA - Caused stunting to one field of sweet corn in Boone County. (W. Va. Ins. Sur.).

GREENBUG (Schizaphis graminum) - IOWA - Heavy parasitism reported from Adams, Ida, and Pottawattamie Counties. Late-planted sorghum and sorghum-sudan critically damaged in Crawford, Page, and Taylor Counties. (Iowa Ins. Sur.). NEBRASKA - Ranged 500-5,000 per plant on heading milo in eastern areas. Parasites developing rapidly in heading fields. Many late-planted forage sorghum fields destroyed. (Roselle). KANSAS - Populations may increase rapidly soon in western and southern districts, where lady beetles and parasites now light. Parasitic wasps continue to aid in greenbug control in sorghum in northeast and east-central districts. Treating of heavily infested late-planted sorghum reported in Butler County. One field of 4-inch late-planted sorghum in Shawnee County killed after being treated once. (Bell). OKLAHOMA - Heavy on sorghum in Perkins area, Payne County. Controls planned. Scattered fields sprayed in Cimarron County. Light in Beaver and Tillman Counties. (Okla. Coop. Sur.). TEXAS - Infestations light to heavy across northern Panhandle. Light, with localized heavy outbreaks, in Hutchinson, Carson, Castro, Moore, Deaf Smith, and Parmer Counties. Beneficial insects moderate to heavy; parasitized aphids increasing. Greenbug generally light in South Plains compared to previous years. Surveys in South Plains counties show population very spotted; economic in only few fields in each county. Parasite activity continues to increase. Based upon trends noted past 3 years, greenbug should decrease next 10 days. Surveys in 16 panhandle counties indicate infestations lighter than usual by mid-July. Counts per plant variable; ranged 0-10 in Oldham County to 0-8,000 in Castro County. Less than 300 per plant on grain sorghum in boot-stage in Coyanosa area of Pecos County. (Neeb et al.). COLORADO - Controls underway on sorghum in northeastern areas. (Pilcher, Hantsbarger). ARIZONA - Population buildup starting in Avra Valley, Pima County. (Ariz. Coop. Sur.). WASHINGTON - This species and Rhopalosiphum padi in 2 barleyfields near Pullman. All forms except winged adult greenbug noted. Damage to barley heads severe due to frost, aphids, or weed killer. (Retan, Johansen).

POTATO LEAFHOPPER (Empoasca fabae) - VIRGINIA - Population heavier than for past few years in Nansemond County; growers treating. (Smith). MARYLAND - Ranged up to 50-60 per sweep in alfalfa in Kent County. Averaged 8 per sweep in most fields throughout Eastern Shore. Heaviest in Frederick, Baltimore, Carroll, and Howard Counties; 30-50 per sweep with most fields averaging 15 per sweep. Yellowing of foliage noticeable in heaviest infested alfalfa. (U. Md., Ent. Dept.). VERMONT - Building up on legumes, little evidence of yellows in margins of fields. (Nielsen). WISCONSIN - Some yellowing in scattered alfalfa. Nymphs ranged 10-15 per sweep in such fields; 1-5 per sweep in other fields. (Wis. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Ranged 6-20 per 10 sweeps in 2 fields in Barber County, and 50 per 10 sweeps in field in Graham County. (Bell). INDIANA - Alatae and apterae 20 per sweep in alfalfa field in Vigo County. Negative in other fields surveyed. (Meyer). WISCONSIN - Some increase noted, especially in new alfalfa seedings. (Wis. Ins. Sur.).

TOBACCO HORNWORM (Manduca sexta) - KENTUCKY - Found 2 larvae in 3-acre tobacco plot in Scott County. (Barnett).

TOMATO HORNWORM (Manduca quinquemaculata) - OHIO - Averaged 1 per 15 plants in Muskingum County. (Andress).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - First-brood development ranges from egg to pupae in Cass, Barnes, Ransom, Richland, Sargent, and Dickey Counties. Most in second and third larval stage. Egg masses ranged up to 64 (averaged 21) per 100 plants. Up to 36 (averaged 11) percent of plants infested (shotholed). Larvae ranged up to 168 (averaged 23) per 100 plants. (Kaatz). NEBRASKA - Adult emergence occurring in all areas of State. Egg masses less than one per 20 plants in eastern counties. First-brood larvae 70 percent pupated, but some fourth instars still present. (Roselle). MINNESOTA - Second-generation moth emergence started, will increase next few weeks. Moth emergence could last into September. Potential for heavy second generation populations high. (Minn. Pest Rpt.). WISCONSIN - Second moth flight begun in some advanced areas in southern section; emergence not readily apparent at blacklight stations due to cool nights. Moths more numerous in blacklight traps in eastern counties. First-generation larval damage becoming more apparent in some fields. Larvae in ear tips in some sweet corn, much stalk breakage in some grain corn. (Wis. Ins. Sur.). ILLINOIS - Second-generation moths laying eggs, hatch rapid in southern sections. Moth emergence in central areas well underway, egg laying begun. In northern section, pupation 52 percent and emergence 24 percent. Peak egg laying will probably not occur for 7 days in central areas, 10 days in northern areas; could continue 14 days or more. Cool weather slowed development. Heavier than normal first-generation populations in southwestern and western areas increased possibility of corn damage by second-generation borers. (Sur. Bul.).

INDIANA - Second-generation O. nubilalis moth flights underway throughout State. Light trap catches week July 19-25: 124 in Tippecanoe County, 99 (sandy area) and 168 (muck) in Porter County, 99 in Gibson County. These catches associated with previous heavy second-generation infestations. Most corn in silking stage, large quantities of pollen present. (Huber). Adults observed in many fields in west-central and northwest districts, with first-generation larvae and pupae. (Meyer). MICHIGAN - Moth collections totaled 219 at Monroe County blacklight station, peak of 110 on July 23. Second-generation emergence started July 19 in Montcalm County. Growers can expect this second brood to string out with limited numbers emerging and laying eggs until end of growing season. Higher percentage of second-brood larvae will bore into cobs and stalks for winter protection. Growers will also need constant controls on snap beans and peppers. (Newman). MAINE - Up to 10 percent infestation in some fields of sweet corn. (Erhardt). OHIO - Second-generation moths first caught in blacklight traps on July 23. (Rings, Rose). Moth collections at Wooster, Wayne County, not increasing rapidly. (Rings). DELAWARE - Adults averaged 135 per night in blacklight trap at Bridgeville, Sussex County. Larvae averaged 4.3 percent in untreated peppers, no fresh egg masses found at Bridgeville. (Lesiewicz). WEST VIRGINIA - Damage moderate statewide to early planted field corn. Damage heavy in one field in Monroe County. (W. Va. Ins. Sur.). VIRGINIA - Less than 15 percent of cornstalks infested in Nottoway, Dinwiddie, Sussex, Southampton, Nansemond, Isle of Wight, Surry, and Prince George Counties. (Allen). ALABAMA - Several larvae observed in cornstalks and ears from Russell County. This is a new county record. (Bice et al.).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Continues troublesome on sorghum in Caldwell, Gonzales, Guadalupe, and Lee Counties. Moderate to heavy feeding in whorls and developing grain in Knox County. Moderate in whorls, damage light to moderate on isolated crops in Reeves and Pecos Counties. (Neeb et al.). OKLAHOMA - Moderate to heavy in sorghum in Grady, Cleveland, Oklahoma, Kay, and Tillman Counties. Averaged about 1 per plant in sorghum and 3 per plant in corn in Tipton area, Tillman County. (Okla. Coop. Sur.). ARKANSAS - Feeding in whorls of unheaded late sorghum becoming more general statewide; at noneconomic level. (Boyer). MISSOURI - Damage to late sorghum observed in southeast area. (Houser). Observations in late corn and sorghum in southwest area showed 2-67 percent of plants infested with early instars. (Munson). MARYLAND - First infestation of season in 0.25 acre of sweet corn in Wicomico County. Averaged 10 percent damage, required controls. Damage to late-planted corn expected within 7 days in central areas. (U. Md., Ent. Dept.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Adults in central and southwestern counties. Egg masses on 12 percent of plants in one field at Imperial. (Roselle). COLORADO - Moth catches declining in northeastern areas. Many egg masses hatched, some fresh egg masses produced. Some fields averaged one egg mass (hatched and unhatched) per plant. Control underway. (Hantsbarger, Pilcher). KANSAS - Egg masses on 5 percent of plants in field of silking corn in Wichita County. Many eggs hatched, young larvae feeding in tassels. Few egg masses found in corn in Cheyenne, Rawlins, and Greeley Counties. First instars feeding on ear shucks in cornfield in Greeley County. (Bell).

CORN ROOTWORMS (*Diabrotica* spp.) - WISCONSIN - Adults increasing; up to 5 per ear in parts of Rock County. Leaf damage apparent where *D. vergifera* (western corn rootworm) dominant; mostly this species in Grant, Iowa, and Dane Counties. *D. vergifera* more prevalent in Rock County than in 1970; noted as far north as Portage County. No *D. longicornis* (northern corn rootworm) or *D. vergifera* noted in extreme northwestern counties. (Wis. Ins. Sur.). ILLINOIS - Emergence of *D. longicornis* and *D. vergifera* adults very rapid. Adults feeding on silks in many cornfields in northwestern areas. Control recommended if field less than 50-percent silked and 5 or more adults per plant. (Sur. Bul.). MINNESOTA - *D. vergifera* and *D. longicornis* adults found in heavier numbers throughout southern counties. Most counts light; usually 1 or 2 per 10 plants. (Minn. Pest Rpt.). KANSAS - *Diabrotica* spp. adults generally less than 1 per plant in silking corn in northwest and west-central districts, up to 5 per plant in corn in east-central district. (Bell). MISSOURI - Adults in northeast area ranged 20-140 per 100 plants. Heaviest counts averaged 111 *D. longicornis* and 40 *D. vergifera* per 100 plants. (Thomas). Counts in Lincoln County showed less than 20 percent of plants infested with less than 1 adult per plant. Field in Lincoln County showed 100 percent infestation of *D. longicornis* adults, averaged 7.6 per plant. Field in Lewis County had 50 percent of plants infested with 2 per plant. (Huggans). OKLAHOMA - *D. virgifera* adults ranged 2-8 per plant on corn in Cimarron County. (Okla. Coop. Sur.). UTAH - *Diabrotica* spp. damage severe in corn planting at Richmond, Cache County. (Roberts, Knowlton). Adults feeding on silks of corn in infested area of Weber County. (Roberts, Rogers).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Damage levels continue to increase in Frederick, Carroll, and Montgomery Counties. Field corn (400 acres) in Emmitsburg and Braddock Heights area of Frederick County required controls. Injury statewide remains subeconomic. (U. Md., Ent. Dept.).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Increasing in Haskell and Knox Counties. Very light emergence from grain sorghum head samples. Overall midge population extremely light. Due to large acreage of late-planted grain sorghum, midge infestations may still develop in August. Midge emergence observed from Johnson grass samples collected in Briscoe, Castro, and Parmer Counties. (Daniels et al.). ILLINOIS - Damage to sorghum reported in southern areas. (Sur. Bul.).

BANKS GRASS MITE (*Oligonychus pratensis*) - COLORADO - Common in many cornfields in northeastern areas. Generally light with only bottom leaves infested. Control underway. (Hantsbarger, Pilcher). TEXAS - Light in grain sorghum in several counties. Most activity in Bailey and Lamb Counties. Infestations appeared to decrease during cool, rainy weather past few days. In most instances, infestations in grain sorghum below damaging levels and did not warrant control. Light in Pecos and Reeves Counties. Increased on most crops in El Paso County. (Neeb, Rummel).

SMALL GRAINS

HESSIAN FLY (*Mayetiola destructor*) - KANSAS - Wheat loss for 1971 estimated at 3,031,030 bushels; about 4 times that of 1970. Areas with highest losses: Central, north-central, south-central, west-central, and southwest. Statewide, samples from resistant varieties averaged 0.6 percent infested clums, samples from susceptible varieties averaged 8.1 percent. (Bell).

ENGLISH GRAIN APHID (Macrosiphum avenae) - IDAHO - Populations of up to 10 per wheat head at Coeur d'Alene, Kootenai County, July 9, reduced to 1 per 10-20 heads by lady beetles by July 22. (Stranahan, Portman).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - WYOMING - Counts per 10 sweeps of alfalfa in 5 Park County fields ranged 0-50 (average 25), 50-80 (average 65), 30-50 (average 40), 140-180 (average 160), and 120-200 (average 160). (Burkhardt). UTAH - Adults averaged 2 and larvae 1 per 10 sweeps of alfalfa in Logan area of Cache County. (Knowlton). Caused conspicuous injury in dryer areas of Wasatch County. (Daniels). WISCONSIN - Counts decreased due to cool temperatures. One adult and one last instar collected in Pepin County alfalfa for a new county record. (Wis. Ins. Sur.).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - IDAHO - Collected at Sandpoint, Bonner County, and at Rathdrum, Kootenai County, June 20 and at St. Maries, Benewah County, and at Avery, Shoshone County, June 22 on white and yellow sweetclover. These are new county records. (Portman).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - NEVADA - All instars averaged 4 per sweep on seedling alfalfa in Fish Lake Valley, Esmeralda County. (Adams, Nishida). Mostly late instars on 500+ acres in Quinn River Crossing area, Humboldt County; treatment applied. (Rowe). Treatments applied to unspecified alfalfa acreage in Diamond Valley, Eureka County. (Sharp). Appearing in alfalfa at Lovelock, Pershing County. (Stitt).

ALFALFA CATERPILLAR (Colias eurytheme) - TEXAS - Moderate to heavy damage in Pecos County alfalfa. (Neeb). WISCONSIN - Second instars to pupae prevalent in most second-growth alfalfa, ranged 3-6 per sweep over most of State. Many fields being cut. Adults laying eggs. (Wis. Ins. Sur.).

CELERY LOOPER (Anagrapha falcifera) - MICHIGAN - Moths within normal limits. Light trap collections indicate increasing population from Berrien County northward in counties bordering Lake Michigan. (Newman).

SWEETCLOVER APHID (Therioaphis riehmi) - IDAHO - Colonies found on roadside white and yellow sweetclover July 22 in Shoshone County. This is a new county record. (Portman).

PEA APHID (Acyrthosiphon pisum) - NORTH DAKOTA - Heavy, up to 200 per sweep, on irrigated second-crop alfalfa in Burleigh County. (Brandvik). UTAH - Ranged 3-35 per 10 sweeps of alfalfa in Logan area of Cache County. (Knowlton).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Counts (1-3 per row yard) indicate controls needed in several fields in Wicomico and Worcester Counties. Adults ranged from less than one to 3 per 10 row feet in most fields in other Eastern Shore counties. (U. Md., Ent. Dept.). VIRGINIA - New adults emerged, counts at low levels in Nansemond County. (Smith). Damage in southern Tidewater area very light. (Allen).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Moderate to heavy in Monroe County. Infestation associated with light to moderate infection level of bean pod mottle disease. (Robinson). KENTUCKY - Adults averaged 20 per 100 sweeps in Carlisle County. (Barnett).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Treated 300 acres of soybeans in Crenshaw County. (Smith, Henderson). MISSISSIPPI - Moderate lodging in one field in Noxubee County. Heavy lodging in 2 Oktibbeha County fields. (Robinson).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MISSOURI - Moderate and damaged soybeans in northeast area. (Thomas).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - TEXAS - Still increasing in many areas as result of continued dry weather. Infestations of 30-40 percent on dryland peanuts with heavier counts in sandy fields in Erath County. Percent infestation ranged 3-18 in irrigated peanuts, 5-30 in dryland peanuts in Commanche County. Controls applied in most fields. Observed in Frio, Lee, and Wilson Counties. Infestations ranged 15-40 percent in dryland fields in Fannin County. (Hoelscher et al.).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Mixed populations of this species and *S. ornithogalli* (yellowstriped armyworm) heavy and damaging Caddo County peanuts. (Okla. Coop. Sur.).

REDNECKED PEANUTWORM (*Stegasta bosqueella*) - FLORIDA - Damaged 15 acres of peanuts at Williston, Levy County; controls necessary. (Strayer).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In McLennan and Falls Counties, surveys indicate increase in weevil damage. Punctured squares averaged 10.4 (maximum 15.2) percent in 4 treated fields and averaged 13.8 (maximum 18.5) percent in 4 untreated fields. Numerous newly emerged adults noted. (Cowan et al.). OKLAHOMA - Infestations ranged 10-20 percent in Marshall County and averaged about 5 percent in Jackson and Harmon Counties. Moderate in Bryan and Cleveland Counties. (Okla. Coop. Sur.). LOUISIANA - Expect increase in punctured square counts. Populations more numerous and in more fields than previous years. (Tynes et al.). MISSISSIPPI - First-generation weevils appear to be emerging in some counties. Percent average infestation in Pike County 90 and in Holmes County 12. (Robinson). ALABAMA - Rains continued in record amounts in south and central areas. Square infestations ranged 10-80 percent. Growers experiencing difficulty in staying on scheduled treatments. Damage continues in many small fields and some larger ones in northern areas. Percent infested squares still below economic levels in most of larger fields. (McQueen). GEORGIA - Percent punctured squares per 100 terminals: 0-35 in Randolph County (Womack); 0-40 in Tift County; 0-35 in Burke County (Cannerday). Weevil infestation increasing in northern areas. (Womack). SOUTH CAROLINA - In Florence County for period ending July 21, infestations increased; plan controls. (Taft et al.).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - In Florence County for period ending July 21, infestations light in most fields. Moth collections in blacklight traps totalled 11 *H. zea* and no *H. virescens*. (Taft et al.). GEORGIA - Eggs ranged 0-28 and larvae 0-14 per 100 terminals in Randolph County (Womack); 0-100 eggs and up to 80 larvae in Tift County (Cannerday). ALABAMA - Generally light except on few isolated farms in south and central areas. (McQueen). MISSISSIPPI - Egg deposition heavy in several counties throughout delta. (Robinson). TEXAS - In McLennan and Falls Counties, eggs averaged 27.6 (maximum 55.2) and larvae 1.9 (maximum 2.7) per 100 terminals in 4 treated fields. Eggs averaged 24.7 (42.8) and larvae 1.9 (2.2) in 4 untreated fields. Injured squares averaged 2.3 percent in 4 treated fields and 4.1 percent in 4 untreated fields. (Cowan et al.). ARIZONA - *Heliothis* spp. and *Spodoptera exigua* (beet armyworm) building up on blooms and young bolls in Cochise County. (Ariz. Coop. Sur.).

TOBACCO

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - KENTUCKY - Adults averaged 2-3 per leaf, caused 3 percent foliage loss at one Scott County location. (Barnett).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Populations and control problems exceed those of 1970 in home gardens, and some sprayed and unsprayed fields statewide. (Gall). NEW JERSEY - Egg counts very heavy in Adelphia, Monmouth County, potatoes. (Ins.-Dis. Newsltr.). UTAH - Still problem in Cache County potatoes. (Burtenshaw).

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Heavy larval feeding on lower leaves in potatofield near Harrisburg, Linn County. Potential for larvae to damage shallow tubers. (Crowell).

ALFALFA LOOPER (Autographa californica) - WASHINGTON - Larvae of this species and Ceramica picta (zebra caterpillar) caused severe damage to several acres and fields of potatoes near Warden, Quincy, and Royal Slope in Grant County. (Foeppel).

BEANS AND PEAS

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - First through last instars averaging 30 per square yard on bush beans at Junction City, Lane County. One 5-acre field ready-to-harvest, disced under because of excessive damage to pods. (Crowell, Berry).

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Larvae increasing in Weld County and causing damage. Some controls applied. (Rothman).

GENERAL VEGETABLES

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - KENTUCKY - Damaged root stock of rhubarb in Jessamine, McCracken, and Fayette Counties. (Barnett).

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Winged and wingless forms noted near Swedesboro, Gloucester County. (Ins.-Dis. Newsltr.).

DETECTION

New State Records - A LONGHORNED BEETLE (Hesperophanes pubescens) VIRGINIA - Female collected in light trap at Blacksburg, Montgomery County, July 28, 1970, by R.H. Perry. Determined by R.H. Perry, confirmed by G.B. Vogt. (Allen). A SAWFLY (Nematus abbottii) ALABAMA - Lee County. (p. 569).

New County and Island Records - A STAG BEETLE (Dorcus brevis) VIRGINIA - Male taken from light trap at Holland, Nancemond County, August 17, 1970. Determined by O.L. Cartwright. (Perry). ALFALFA WEEVIL (Hypera postica) WISCONSIN - Pepin (p. 565). ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) MISSOURI - Stone, Christian, Webster, and Dallas (p. 569). EUROPEAN CORN BORER (Ostrinia nubilalis) ALABAMA - Russell (p. 563). GYPSY MOTH (Porthetria dispar) MARYLAND - Carroll, Prince Georges, Frederick, Somerset, and Montgomery (p. 571). HOLLYHOCK WEEVIL (Apion longirostre) KANSAS - Johnson (p. 568). JAPANESE BEETLE (Popillia japonica) TENNESSEE - Haywood (p. 571). A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Berks (p. 568). A LYGAEID BUG (Neacoryphus bicrucis) HAWAII - Maui (p. 572). SWEETCLOVER APHID (Therioaphis riehmi) IDAHO - Shoshone (p. 565). SWEETCLOVER WEEVIL (Sitona cylindricollis) IDAHO - Bonner, Kootenai, Benewah, Shoshone (p. 565).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - COLORADO - Collections in attractant traps show increase past 2 weeks in Mesa County. (Bulla). MICHIGAN - Second-brood moth emergence building toward peak in southwest counties. Emergence further north should start soon. Fresh larval entries into fruit observed. Cover sprays remainder of season should be made on basis egg laying will continue about 2 months. (Thompson).

CUTWORMS - WASHINGTON - Larvae severely damaged pear foliage and 10-25 percent of fruit in Yakima, Yakima County. Treatment not giving adequate control. (Jenkins, Hudson).

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - All stages present on pear in Yakima County. Active stages and adults surviving heat and numerous spray combinations. (Gregorich). OREGON - Heavy in Garden Valley area of Douglas County July 12-30. Many growers neglected control program due to ease of control in past years. During week ending July 23 population became problem in all orchards where little difficulty experienced in past. Application of 2 or 3 sprays in 10-day period necessary to regain control. (Passon).

PEARSLUG (Caliroa cerasi) - UTAH - Damage conspicuous in Salt Lake, Davis, Weber, and Box Elder County cherry orchards. (Knowlton, Burtenshaw).

SPIDER MITES - OREGON - Panonychus ulmi (European red mite) building up to very heavy populations in some orchards and causing considerable defoliation in some integrated control blocks of pears. (Berry). COLORADO - Tetranychus urticae (twospotted spider mite) damaged apple and pear in Delta, Montrose, Mesa, and Garfield Counties. Ranged 20 to 100 per leaf in orchards with heavier populations. (Bulla). CONNECTICUT - P. ulmi populations reported heavy on unsprayed trees in New Haven. Foliage bronzed. Also troublesome in Bantam and East Lyme. (Savos).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Infesting pecans throughout south and south-central counties. Commercial growers sprayed in Gonzales and Guadalupe Counties. Heavy on pecan trees in yards in almost every city and town in area. Light in Crockett County. (Neeb, Cole).

CITRUS

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Infestation at treatment level in 2 groves on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

ORNAMENTALS

NANTUCKET PINE TIP MOTH (Rhyaconia frustrana) - KANSAS - Heavy larval infestations on pines in nursery plantings in Riley and Geary Counties. (Bell).

HOLLYHOCK WEEVIL (Apion longirostre) - KANSAS - Found on hollyhock in a nursery in Johnson County. This is a new county record. (Bell).

A LACE BUG (Stephanitis takeyai) - PENNSYLVANIA - Adults and nymphs collected on andromeda (Pieris sp.) at nursery at Angelica, Berks County, by D. Christie July 21. This is a new county record. (Simons).

FOREST AND SHADE TREES

DOUGLAS FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - WASHINGTON - Serious on 1,000 acres along south bank of Wenatchee River between Leavenworth and Cashmere in Chelan County; causing top kill, moving into pines; light on 200-300 acres of private land at Shriner Beach on Lake Chelan. Moderate on 200 acres northwest of Riverside on Okanogan River, Okanogan County, and light 10 miles southeast of Oroville; pupating at latter location. Evaluation surveys to be made in late fall to determine necessity of control measures. (Pettinger).

SPRUCE BUDWORM (Choristoneura fumiferana) - WASHINGTON - Infestations spotty but increasing in Okanogan and Chelan Counties. No losses expected. (Pettinger).

JACK PINE SAWFLY (Neodiprion pratti banksianae) - MICHIGAN - Pupae in duff. About 30,000 acres of jack pine heavily defoliated in Luce and Schoolcraft Counties. Additional 50,000 to 60,000 acres of mixed stands show much damage. (Johnson).

GEOMETRID MOTH (Calocalpe undulata) - PENNSYLVANIA - Larvae very heavy on black cherry trees, about 50-100 percent foliage loss in Route 31 area from Bakerville, Somerset County, to 5 miles into Westmoreland County. (Keeler). Infested wild cherry trees in Somerset County; some defoliation; adults appearing. (Mallis).

WALNUT CATERPILLAR (Datana integerrima) - WEST VIRGINIA - Larvae causing heavy defoliation of hickory in Wood County. (W. Va. Ins. Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - CALIFORNIA - Larvae and adults on scattered elm trees in Chinese Camp, Tuolumne County. Occurrence erratic this season, probably due to cool wet spring. Damage appearing at many locations statewide. (Cal. Coop. Rpt.). UTAH - Severe on elms in many parts of Cache, Emery, Salt Lake, and Weber Counties. Control necessary in many areas. (Knowlton). TEXAS - Second generation in Denton, Dallas, Ft. Worth areas. Damage heavy to Chinese elm trees in Midland and Pecos Counties. (Neeb, Turney). MISSISSIPPI - Light to heavy damage to elms in Washington, Leflore, Tunica, and Lowndes Counties. (Robinson).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - WEST VIRGINIA - Damage moderate to sapling oaks in 120-acre tract in Wetzel County. (W. Va. Ins. Sur.). MISSOURI - Adults common at lights throughout southern areas of State. Adults collected in Stone, Christian, Webster, and Dallas Counties. These are new county records. (Munson).

A SAWFLY (Nematus abbottii) - ALABAMA - Larvae feeding on black locust at Auburn, Lee County, March 22, 1971. Collected by H.F. McQueen. Determined by D.R. Smith. This is a new State record. (McQueen).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 5 cases reported in U.S. July 25-31 as follows: TEXAS: Maverick 1, Bowie 1; ARKANSAS: Little River 3. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - UTAH - Numerous and annoying to horses at Snowville, Box Elder County. (Hanson, Knowlton). IOWA - Ranged 5-15 (average 10.1) per face in Dallas County. (Iowa Ins. Sur.). WISCONSIN - Light to moderate annoyance to cattle reported from all areas. (Wis. Ins. Sur.). MARYLAND - Ranged 2-100 per head in Frederick, Howard, Baltimore, Carroll, and Montgomery Counties. Most herds averaged 20 per head. (U. Md., Ent. Dept.). MISSISSIPPI - Up to 25 per face on treated cow herd in Monroe County. (Robinson).

MOSQUITOES - FLORIDA - Aedes spp. and Psorophora spp. moderate to heavy in western Duval County. Aedes taeniorhynchus moderate and required special control measures in Boca Chica and Key West area of Monroe County. (Mulrennen et al.). KENTUCKY - Mosquitoes a problem in McCracken County. (Barnett). WISCONSIN - Populations remain variable; heavy in most counties with some wetlands, only trace in some upland areas. A. vexans, A. cinereus, and A. stimulans principal biters. (Wis. Ins. Sur.). MINNESOTA - Total of 16,000+ females taken in 16 light traps week ending July 23. A. vexans 87 percent, Coquillettidia perturbans 4.7 percent. Collections declined since due in part to cool nighttime temperatures. A. vexans in 37 percent of larval collections, Culex tarsalis in 12 percent, and A. triseriatus in 2.4 percent. In evening bite collections, 352 of 414 adults taken A. vexans. A. vexans also taken in daytime bite collections. (Minn. Pest Rpt.).

HORN FLY (Haematobia irritans) - MARYLAND - Counts continue well below normal in all central counties. Most herds clean with heaviest counts ranging 5-10 per head. (U. Md., Ent. Dept.). WISCONSIN - Moderate annoyance to cattle reported in most counties. (Wis. Ins. Sur.). IOWA - Ranged 10-300 (average 106) per side in Dallas County. (Iowa Ins. Sur.). KANSAS - Averaged about 200 per head on small herd of pastured dairy cattle in Geary County. (Bell). OKLAHOMA - Averaged 1,000 per head on cattle in Payne County. Heavy in Osage and Cotton Counties, moderate in Bryan, Cleveland, Hughes, and Beaver Counties, and light in Cimarron County. (Okla. Coop. Sur.). MISSISSIPPI - Averaged 50 per 300 head of cattle in Monroe County. (Robinson).

STABLE FLY (Stomoxys calcitrans) - IOWA - Ranged 4-20 (average 7) per leg on untreated cow herd on pasture in Dallas County. (Iowa Ins. Sur.). WISCONSIN - Severe annoyance to cattle reported at locations in Calumet, Columbia, Sauk, and Juneau Counties. Counts light to medium elsewhere, depending on control efforts. (Wis. Ins. Sur.). MARYLAND - Adults ranged 5-100 (average 8) per head in Frederick, Harford, Baltimore, and Howard Counties. (U. Md., Ent. Dept.).

TABANID FLIES - WISCONSIN - Deer flies very heavy near river bottoms and marshes in parts of Columbia, Iron, and Buffalo Counties. (Wis. Ins. Sur.). OKLAHOMA - Tabanus spp. very heavy along creeks and in wooded areas in Cotton County. Moderate on cattle in Hughes County. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - ALABAMA - Numerous specimens in home at Bremen, Cullman County. Controls applied. (Boswell).

BENEFICIAL INSECTS

A LADY BEETLE (Stethorus picipes) - WASHINGTON - Eggs and adults present and increasing on apples in Yakima Valley. Feeding on Tetranychus mcdanieli (McDaniel spider mite) at Wapato, Yakima County. All stages noted on 120 acres of Delicious apples in Yakima County where eliminated heavy mite population and now attacking aphids. S. picipes apparently compatible with predaceous mite Metaseiulus occidentalis. (Gregorich et al.).

SYRPHID FLIES - WASHINGTON - Becoming particularly abundant due to relatively high aphid populations on small grains, peas, alfalfa, shrubs, and shade trees. Most abundant species Scaeva pyrastri, Syrphus opinator, and Eupeodes volucris in Whitman County. (Telford).

A DAMSEL BUG (Nabis alternatus) - WASHINGTON - Adults and nymphs 2 per sweep in alfalfa seed fields following selective spray program, 0.1-1 per sweep in other seed fields in Lowden and Tochet area, Walla Walla County. (Johansen).

EUROPEAN MANTID (Mantis religiosa) - INDIANA - In 1969, specimen submitted from Elkhart County which represented valid collection record. In 1970, specimens taken in Elkhart, Allen, and Tippecanoe Counties. Appears that species now spread (or been introduced) and become successfully established in northern third of State. (Chandler).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - MICHIGAN - Adults up to 3 per 100 sweeps of quackgrass in commercial Christmas-tree plantations July 22-23 in southwest Kalkaska County. (Hanna).

GRASSHOPPERS - WASHINGTON - Several reports of present or potential damage. Grasshoppers ranged 12-15 per square yard east of Pasco, Franklin County. Damaging in Burbank area, Walla Walla County. Ranged 3-5 per square yard on farmland in Ice Harbor Dam area of Franklin and Walla Walla Counties; averaged 8 per square yard on wildlands near Kohlotus. Also reported in Benton County. (Retan et al.). NEVADA - Mostly Melanoplus sanguinipes, with some Oedaleonotus enigma, infesting 6,500 acres of crested wheatgrass in Paradise Hill and Paradise

Valley areas of Humboldt County; ranged 12-14 per square yard. Treatments to be applied. (Wilson). Grasshoppers ranged 35-50 per square yard on 2,000+ acres of crested wheatgrass at Elko, Elko County. (Martinelli, Peters). IDAHO - Total of 718,550 acres of rangeland treated to date, reevaluation of additional acerage to be treated underway. (PPD). UTAH - Ranged 1-10 per square yard (5 percent adults) on North Logan area range near cropland in Cache County; adults mostly M. sanguinipes. (Knowlton). Unspecified nymphs 3-15 per square yard in many pastures in Logan area. Melanoplus spp. 40-60 per square yard in alfalfa field at Logan. (Knowlton). Grasshoppers becoming numerous about many farms, pastures, and home gardens in Cache County. (Knowlton, Burtenshaw). COLORADO - Nymphs economic in Baca, Bent, Fremont, Las Animas, Otero, Prowers, and Pueblo Counties; an estimated 143,300 acres infested. Ranged 15-100 per square yard on rangeland in Bent, Las Animas, Otero, and Pueblo Counties. (Watson). NEBRASKA - Melanopus spp. ranged 6-20 per square yard in field margins in Lancaster County. (Roselle). SOUTH DAKOTA - Grasshoppers economic in localized areas of Davison, Jerauld, and Sanborn Counties. Some roadsides with 15-25 adults per square yard. M. bivittatus dominant. Damage economic in some Davison County corn. (Burge, Fransen). NORTH DAKOTA - Economic infestations in northwestern Richland and northeastern Ransom Counties. Ranged 15-20 per square yard, margin counts up to 40 per square yard. Ranged 3-5 per square yard on sandhills rangeland area in north-central district, averaged less than 1 per square yard in all other areas. M. bivittatus, M. sanguinipes, and M. femurrubrum dominant. (Grasser). MINNESOTA - Grasshoppers averaged 30+ per square yard in few alfalfa fields in eastern Otter Tail County. Population 50 percent each M. sanguinipes and M. femurrubrum. Occasionally ranged 10-20 per square yard along roadsides and ditch banks in Redwood County. Averaged 5 per square yard at scattered roadside locations in western Marshall County. (Minn. Pest Rpt.).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - On July 23 first check of 25 traps at Duck Lake, Calhoun County, negative. Natural lure (disparlure) used. This area was core of 1966 infestation. (Moore). OHIO - Male taken in trap at Harrison Lake State Park, Fulton County, July 29, 1971, by R. Wallis. MARYLAND - Adults trapped in Carroll, Prince Georges, Frederick, Somerset, and Montgomery Counties during July 1971. These are new county records. NORTH CAROLINA - Male taken in trap at rest area on Interstate Highway 95 in Robeson County, July 20, 1971, by W.A. Hayes. Additional males trapped in Dare (July 30) and McDowell (July 29) Counties. ALABAMA - Male taken in trap at Ponderosa Trailer Court in Phonix City, Russell County, July 21, 1971, by R. High. Specimens from North Carolina and Alabama determined by V.H. Owens, confirmed by E.L. Todd. Specimens from Ohio and Maryland determined by E.L. Todd. Until further survey and scouting are completed to verify the nature of the situation, these will be considered as regulatory incidences. (PPD).

JAPANESE BEETLE (Popillia japonica) - OHIO - Adults feeding on silks and tassels of 0.25 acre field of sweet corn in Muskingum County. Silks on about 10 percent of plants completely eaten. (Andress). TENNESSEE - Adult taken in trap in Haywood County by J. Dorden July 16, 1971. Determined by V.H. Owens, confirmed by R.D. Gordon. This is a new county record. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Infested bolls ranged 2-20 percent. Untreated fields in upper Yuma Valley reached average boll infestation of 15 percent in Yuma County. Survey in Cochise County negative. Population building up in Pima County, but not sufficiently heavy to require treatment. Third generation underway. (Ariz. Coop. Sur.). CALIFORNIA - Sterile moths released during period July 30 to August 4 totalled 1,236,000; total to date 52,322,000 at Bakersfield, Kern County. (PPD).

WESTERN CHERRY FRUIT FLY (Rhagoletis indifferens) - CALIFORNIA - No larvae found in fruit samples processed from Humboldt and Siskiyou Counties. (Cal. Coop. Rpt.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Survey outside core area of infestation at Klamath River, Siskiyou County, negative. Bacillus thuringiensis gave excellent control in known infested spots in county.

Podisus maculiventris (spined soldier bug) reared and released in area for bio-control of larvae. Survey for H. brillians negative at Sacramento, Sacramento County, and at Clovis, Fresno County. (Cal. Coop. Rpt.).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Parasite releases total 4,764 on 22 sites in San Diego, San Diego County. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

Turf and Pasture - Adults of a SKIPPER (Hylephila phylaeus) heavy in Bermuda grass lawns at Hawaii Kai, Oahu; as many as 50 in single lawn. Several adults taken at Kaneohe (windward Oahu) in this same host situation; all other infestations to date recorded from leeward areas. (Funasaki et al.).

General Vegetables - TOBACCO FLEA BEETLE (Epitrix hirtipennis) adults 4-8 per leaf in small backyard planting of eggplant at Ewa, Oahu. (Au). SOUTHERN GREEN STINK BUG (Nezara viridula) nymphs and adults moderate in small backyard planting of yard long and snap beans at Waihee, Maui. Eggs of Trichopoda pennipes (a tachina fly) on about 50 percent of adult hosts. (Miyahira).

Fruits and Nuts - A SWALLOWTAIL BUTTERFLY (Papilio xuthus) light to moderate at large in various areas on Oahu including Waialua, Ewa, Waianae, and Aina Haina. Larvae light on citrus trees in these areas; damage sporadic and light. (Au et al.). COCONUT LEAF ROLLER (Hedylepta blackburni) damage moderate to coconut fronds on 50+ trees at Ala Moana Beach Park; about 30-50 percent of leaflets skeletonized. (Kawamura).

Ornamentals - Nymphs and adults of a MEMBRACID (Antianthe expansa) infesting 2 bushes of night cestrum (Cestrum nocturnum) at Waipahu, Oahu. This is first host relationship record for this new pest. C. nocturnum is ornamental shrub, although fruit and sap said to be poisonous; used medicinally in tropical America to treat epilepsy. (Wong et al.). Single larva of a NOCTUID MOTH (Callopistria sp.) infesting fern at Waimanalo, Oahu. First reported in February 1971; previously reported only from Diamond Head and Kahala area, Kaimuki, and Aina Haina. Confirmed to genus only by E.L. Todd and A.H. Hayes. (Beardsley, Kawamura). All stages of a CONIFER APHID (Pineus pini) light on 4 Pinus sp. saplings and heavy on one bonsai Pinus sp. at Olinda, Maui; causing dieback of terminals. Extensive surveys conducted on Oahu revealed widespread infestations in several residential districts. (Miyahira, Kashiwai).

Miscellaneous - A LYGAEID BUG (Neacoryphus bicrucis) adult taken off single Pinus sp. at Kahului, Maui, for a new island record. Previously reported only from islands of Oahu, Molokai, and Lanai. (Miyahira).

Weather of the week continued from page 560.

record for Sheridan. Temperatures in the 40's were common Thursday morning from Montana to the Great Lakes. The Dakotas to Missouri cooled to the 30's and 40's Friday afternoon. Some of these recorded colder temperatures than had ever occurred in any July: Huron, South Dakota, 37°; in Nebraska, Valentine 38°, Grand Island 42°, Norfolk 42°, Omaha 45°, Lincoln 46°; in Iowa, Burlington 46°, Des Moines 47°; Kansas City, Missouri, 52°. The temperature at Agate, Nebraska, dropped to 29°, the coldest July temperature of record for Nebraska. Afternoons were cool, too. Maximums over the northern Great Plains Thursday were mostly in the 60's and low 70's. St. Cloud, Minnesota, warmed only to 58° Thursday. The weekend brought a warming trend to the central and eastern sections of the Nation and temperatures started their return to normal. In sharp contrast to the cool autumn weather that spread over mid-America, July heat intensified in the West. Many stations from Washington and Idaho to California and Arizona saw 100° at least once over the weekend. One of the hottest temperatures that has come to our attention was 121° at Furnace Creek, California, Saturday afternoon. Most places west of the Rockies averaged warmer than normal. Much of the Great Basin averaged 3° or more above normal. Above normal average temperatures also occurred in New England and in portions of the Atlantic coast. A large area from the Dakotas to the Great Lakes southward to northern Texas averaged 9°-14° cooler than normal.

LIGHT TRAP COLLECTIONS

	Tempera- ture °F.	Precip- itation (inches)	Type of trap (BL = blacklight I = incandescent MV = mercury vapor O = other)	*Agrotis ipsilon* (black cutworm)	*Estigmene acrea* (saltmarsh caterpillar)	*Euxoa auxiliaris* (army cutworm)	*Faronta diffusa* (wheat head armyworm)	*Feltia subterranea* (granulate cutworm)	*Heliothis virescens* (tobacco budworm)	*H. zea* (bollworm, corn earworm, tomato fruitworm)	*Laspeyresia pomonella* (codling moth)	*Loxostege commixtalis* (alfalfa webworm)	*Loxostege rantalis* (garden webworm)	*Loxostege sticticalis* (beet webworm)	*Manduca quinquemaculata* (tomato hornworm)	*Manduca sexta* (tobacco hornworm)	*Ostrinia nubilalis* (European corn borer)	*Peridroma saucia* (variegated cutworm)	*Pseudaletia unipuncta* (armyworm)	*Spodoptera exigua* (beet armyworm)	*Spodoptera frugiperda* (fall armyworm)	*Spodoptera ornithogalli* (yellowstriped armyworm)	*Trichoplusia ni* (cabbage looper)	Crops
FLORIDA																								
Gainesville 7/23-29			BL		1			11		.52						4				2	1	5		
IOWA																								
Kanawha 7/21-27			BL	31			12										91	32	21					
Napier 7/21-23			BL	2			8										84	2	2					
KANSAS																								
Great Bend 7/22-28			BL				19			14					2				31			8		
Tribune 7/23,27			BL				16												12			3		
KENTUCKY																								
Bowling Green 7/28			BL												1	1								
Lexington 7/27			BL													1								
MINNESOTA																								
Rochester 7/20-26			BL																4					
Worthington 7/20-26			BL																10					
MISSOURI (County)																								
Greene 7/22-28			BL	5						21							34		31			108		
Pemiscot 7/23-29			BL	1						39							52		1		5	24		
NEBRASKA																								
Aurora 7/22			BL	133			41			1							115	228	423		44	51		
North Platte 7/29			BL	13			11								1	1	43	10	86					
NEW HAMPSHIRE																								
Lee 7/26			BL	29															59					
NEW JERSEY																								
Plainsboro 7/21-27			BL	108						2					7		68	76	876			10		
Seabrook 7/21-27			BL	106						6					3		28	22	274			16		
NORTH DAKOTA																								
Bottineau 7/20			BL									538		2,040					3					
Fargo 7/26,27			BL											2										
OHIO																								
Reynoldsburg 7/23-29			BL	5													2	1	25					
Wooster 7/23-30			BL	58			4										17	33	184		1			
SOUTH DAKOTA																								
Brookings 7/19-25			BL	32			114										9	74	99					
TEXAS																								
Waco 7/23-29	74-89	8.23	BL	29				35	1									9		53	44	25	419	
VIRGINIA																								
Holland 7/22-27			BL	7						9					2	1	10		27			9		
Montgomery 7/23-29			BL	3						1					2	3			23					
WISCONSIN																								
Cedar Grove 7/20-26			BL	31													60	30	43					
De Forest 7/20-26			BL	3													2	9	14					

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ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Volume 21 August 13, 1971 Number 33

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID heavy on corn in Wisconsin and small grains in Wyoming and Utah. GREENBUG heavy on sorghum in South Dakota, Nebraska, Kansas, and increasing in southwest and west-central Oklahoma. (pp. 581-582).

EUROPEAN CORN BORER moth catches increased in Nebraska and Kansas. Potential for heavy second generation remains in Minnesota and some areas in Illinois. FALL ARMYWORM troublesome on corn and sorghum in several States. CORN ROOTWORM adults increasing and larval damage severe in Wisconsin. WESTERN CORN ROOTWORM damage heavy in Utah and larvae damaged corn in Wyoming. (pp. 583-584).

BOLL WEEVIL heavy on cotton in south and central Alabama. Controls needed in most west Tennessee fields. BOLLWORMS increasing in Arizona, Arkansas, and west Tennessee. Moth catches heavy in Texas and increased in South Carolina. (p. 587).

WESTERN YELLOWSTRIPED ARMYWORM economic on lentils and peas in Idaho. (p. 588).

CONIFER SAWFLIES heavy on pines in Oklahoma; defoliated pines in Florida; and increasing in California. (p. 590).

Treatment of about 12,000,000 aggregated acres expected to be completed in Texas and Louisiana for vectors of Venezuelan equine encephalomyelitis as of August 13. Total of 1,100,000 horses vaccinated in the quarantined States. (p. 591).

GRASSHOPPERS remain heavy in several States. Controls applied to 58,000 acres in Idaho and 73,355 acres in Oklahoma (pp. 592-593).

Detection

● A REDUVIID BUG and an OEDEMERID reported from Hawaii. These are new Western Hemisphere records. (p. 594).

For new county and island records see page 593.

Special Reports

Distribution of Tobacco Flea Beetle. Map. (p. 596).

Reports in this issue are for week ending August 6 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 9

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Summer heat continued over the West as autumn chill came to the Northeast. Rain showers fell over the eastern half of the Nation. They were especially heavy in southern Texas.

PRECIPITATION: Showers and thunderstorms occurred from southern New England to the lower Rio Grande Valley along the front marking the leading edge of a large high, which pushed from south central Canada into the United States. Especially heavy showers occurred in southern Texas. From midnight Sunday to noon Monday 8.75 inches of rain fell at Laredo, Texas. Laredo's total for the 48-hour period ending Tuesday morning was 10.22 inches. This is more rain than has fallen at Laredo in their previous wettest month. Camp Bullis near San Antonio received 13.10 inches of rain in the 48-hour period ending Tuesday morning. The weather system moved slowly and much of the eastern half of the Nation received generous rains in the first half of the week. From 6 to 12.50 inches of rain in eastern and northeastern Baltimore, Maryland, caused 16 deaths and millions of dollars property damage. As the weekend approached, the front became quasi-stationary from northern Texas to the Carolinas. The showers diminished or stopped except across the Southland south of the front. Light sprinkles dotted the central Rocky Mountains and the central Great Plains. No rain or only light widely scattered sprinkles fell over the Dakotas, Minnesota, and nearby portions of the neighboring States.

TEMPERATURE: A large high moved slowly from Canada to the upper Mississippi River Valley early in the week. It brought autumn chill to the North Central and Northeast. Maximum temperatures in the 70's were common from the Red River of the North to New England. By Thursday, the cool air had spread southward to Kentucky and Virginia, and temperatures over much of the Northeast resembled those expected in mid-September. At Huntington, West Virginia, the thermometer reached only to 70° Thursday afternoon. Early morning temperatures in the North Central and Northeast were generally in the 40's and 50's. Summer heat continued over the West. Maximums climbed to 100° to 110° in the southwestern deserts almost every day, and from 100° to 105° for several consecutive days at Havre, Montana. Early morning temperatures across the South ranged from the 80's in the Southwest to the 70's over the South Central and Southeast. As the weekend approached, a large high

For continuation of weather of the week and for 30-day forecast, see page 593.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - NEW YORK - Recovered 5 moths in Minetto blacklight trap July 26-30 in Oswego County. Armyworm and cutworm infestations did not develop as expected except in poorly controlled weedy no-till cornfields. (N.Y. Wkly. Rpt.). NEBRASKA - Infestations on corn reported in York, Seward, and Platte Counties. Some controls applied; most infestations light. Three Seward County fields averaged about 20 percent infested with 1-2 larvae per plant. Presence of armyworm associated with growth of grasses in and around irrigation ditches. (Keith et al.).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Ranged 10-25 per 100 sweeps of sugar beets in Otero County. (Schweissing). CALIFORNIA - Population checks of Russian thistle stands on west side of Imperial Valley indicate population uniform through Coalinga, Fresno County, to Kern and Kings County line. Ratio of adults to nymphs indicates adult die-off and hatch of second summer generation. Curly-top surveys in Glenn, Butte, and Colusa Counties indicate some heavy damage. Highest damage percentages near Chico, Butte County, and near Hamilton City in Glenn County. Curly-top infection averaged 5 percent in Butte County and 16 percent north of Dayton and south of Chico. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults averaging 7 per night in blacklight traps in Sussex County. (Lesiewicz). MARYLAND - Moth counts averaged 8 per night in Dorchester County, and 1-2 per night in Worcester and Queen Annes Counties. Damage to sweet corn ranged 2-8 percent statewide. All instars present in infested ears. (U. Md., Ent. Dept.). VIRGINIA - Infestation 47.2 percent in New Kent, Hanover, King and Queen, Middlesex, and Essex Counties. Samples taken from Lancaster, Northumberland, Westmoreland, and Richmond Counties showed infestation level of 21.0 percent in field corn. Second through fifth instars noted, indicating moths will emerge over long period of time. Blooms on soybeans appearing in these areas; next generation will attack developing beans. (Allen). KENTUCKY - Larvae damaged corn in Owsley and Lee Counties. Larvae averaged 2 per 10-plant sample in Breathitt County. (Barnett). NEBRASKA - Light in all corn. Most infestations less than one percent. About 12 percent of ears infested with third to fifth instars in Seward County field. (Keith et al.). OKLAHOMA - Averaged 1 larva per head in sorghum in Washita County. Heavy in Cotton County and moderate in Kay County. Ranged from absent to very light in sorghum heads in Wagoner and Muskogee Counties. Heavy in corn in Osage County. Averaged 2 per 10 sweeps of alfalfa in Wagoner County. Occasional larva in soybeans in Wagoner and Muskogee Counties. (Okla. Coop. Sur.). ARKANSAS - Found in 12 of 22 fields surveyed. Heaviest count, 15 per 10 row feet. Most sorghum past susceptible stage, except for late crop which will not be susceptible until later. (Boyer). TEXAS - Heaviest infestations observed in Lubbock and Crosby County area. Infestations noted in preboot sorghum and in grain sorghum heads. Corn earworm heavy in Jones, Baylor, Hardeman, and Haskell Counties in whorls of grain sorghum. (Rummel, Boring).

CORN LEAF APHID (Rhopalosiphum maidis) - WISCONSIN - Very heavy on some corn in nearly every county. Heaviest populations appear to be in central areas and some controls applied. Disease among aphids becoming evident. Lady beetle larvae pupae, and adults numerous in fields with heavy aphid populations. Green lacewing adults and eggs numerous in some fields. (Wis. Ins. Sur.). MARYLAND - Generally light. Infested corn ranged 5-20 percent in Kent, Dorchester, Talbot, and Caroline Counties. Aphids moving onto tassels in Harford, Baltimore, Howard, and Frederick Counties. Heaviest infestations ranged 20-40 percent in central areas. (U. Md., Ent. Dept.). ALABAMA - Light to heavy in all grain sorghum and corn examined in Greene, Sumter, and Bibb Counties. Occurrance of maize dwarf moasic and/or corn stunt virus more widespread and damaging in corn in central and northern areas than previously reported. (Smith et al.). OKLAHOMA - Declining in sorghum in Texas County as plants mature. Ranged 50-600 per plant. Light on leaves of nearly mature sorghum in Muskogee County. (Okla. Coop. Sur.). WYOMING - Very heavy in corn near La Grange, Goshen County. Also damaged Sudex near Lusk, Niobrara County. (Burkhardt). UTAH - Heavy in several fields of spring barley in Manti and Ephraim area of Sanpete County. (Knowlton, Herring).

GREENBUG (*Schizaphis graminum*) - SOUTH DAKOTA - General and heavy on sorghum in most areas. Parasites and predators below effective levels due to cool weather. *S. graminum* approaching economic levels in most green sorghum examined near Presho, Lyman County. Drought retarded growth of sorghum in some fields. (Jones). IOWA - Specimens on grain sorghum in Osceola County August 4. This is a new county record. (Iowa Ins. Sur.). NEBRASKA - Declined on grain sorghum in east and southeast due to parasites and predators. Heavy on grain sorghum near Trenton in Hitchcock County and on forage sorghum in Knox County. (Campbell, Thomas). Live aphids ranged 0-10 per leaf and mummies up to 300 per leaf in 3 Otoe County fields. Live greenbugs averaged about 75 per leaf and mummies about 100 per leaf in Dodge County field. (Berogan). KANSAS - Economic in sorghum in southwest district. For first time this season, parasitic wasps important in greenbug control in Scott, Ness, and Lane Counties (up to 70 percent of greenbugs parasitized); fields in which greenbugs showed considerable parasitism extended south into Hamilton, Finney, and Hodgeman Counties. Surveys showed *S. graminum* populations continuing to decrease on sorghum in east-central and northeast districts primarily due to parasitic wasps. Parasitism heavy in one sorghum field in Butler County (first report from this area). Heavy parasitism also in Osborne County. (Bell).

OKLAHOMA - *S. graminum* increasing on sorghum in many southwest and west-central counties. Ranged up to 250 per leaf. Also on volunteer wheat in some areas. Decreasing (rapidly in some fields) in Texas County due to parasitism and plant maturity. Ranged 75-600 per plant with 2-10 percent parasitized in many fields, up to 60 percent parasitized in one field. Ranged 0-250 per plant in one field of nearly mature sorghum in Muskogee County. Light in Payne County. (Okla. Coop. Sur.). TEXAS - Populations in South Plains apparently peaked; decreasing due to activity of beneficial insects. Greenbug light to moderate on grain sorghum in El Paso and Hudspeth Counties. Light in Pecos Valley area. (Rummel, Neeb). COLORADO - Ranged 0-500 per leaf on lower leaves in most sorghum in Arkansas Valley. Heaviest in Prowers County, late-planted fields severely damaged. Controls underway. (Schweissing).

HORNWORMS (*Manduca* spp.) - MARYLAND - Third and fourth instars on Type 32 tobacco ranged 1-3 per 50 plants in Charles, St. Marys, Calvert, and Prince Georges Counties. (U. Md., Ent. Dept.). TENNESSEE - *M. sexta* (tobacco hornworm) damage observed on tobacco in upper eastern area. Daily rains hindered control efforts. (Gordon).

POTATO LEAFHOPPER (*Empoasca fabae*) - NEW YORK - Present but below economic levels. If weather becomes hot and dry after second cutting of alfalfa, fields should be watched. (N.Y. Wkly. Rpt., Aug. 2). MARYLAND - Continues moderate to heavy in 20 percent of alfalfa acreage in Frederick, Carroll, and Baltimore Counties. Heaviest counts in central area ranged 50-250 per sweep. Heaviest counts in Eastern Shore alfalfa ranged 50-75 per sweep. Yellowing of foliage found in several areas throughout State. (U. Md., Ent. Dept.). WISCONSIN - Populations building up on potato, bean, and pepper plants, particularly in home gardens. Not much change in population on alfalfa. Ranged 1-30 per sweep and scattered fields show evidence of yellowing. (Wis. Ins. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Scattered infestations noted in alfalfa near Los Lunas, Valencia County. Adults and nymphs averaged 5-10 per 25 sweeps. (Heninger).

TOBACCO BUDWORM (*Heliothis virescens*) - TENNESSEE - Light on tobacco in Cocke County. Some damage expected. (Williams). KENTUCKY - Larvae averaged 10 per 100 tobacco plants at one location in Breathitt County. (Barnett).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - KANSAS - Blacklight trap catches indicate heavy flight of first-generation moths in Republic County, still increasing. In Brown County, flight appears to be decreasing. (Bell). NEBRASKA - Sharp increases in moth flights at Plymouth light trap; 1,016 caught night of August 2. Egg laying underway but no first instars to date. (Berogan). Moth emergence estimated at 30-50 percent in southeast and east districts. (Keith). MINNESOTA - Second-generation moth emergence increased but no egg masses found. Cool weather, especially cold nights, greatly reduced or stopped moth activity. If weather remains cool, second generation may not be problem. Most larvae not pupated; potential for heavy second-generation populations remains. (Minn. Pest Rpt.). WISCONSIN - Moth catches in blacklight traps increased at many sites on July 31 and August 1. Cool temperatures depressed larval and pupal development and reduced moth activity at night; moths observed flying in cornfields at midday. Very few egg masses found in corn. Larval development and degree of infestation continue quite variable among different areas of State. (Wis. Ins. Sur.). IOWA - Adult emergence 100 percent as of August 5. (Iowa Ins. Sur.). ILLINOIS - Very little egg laying in south-central and western areas, although moth emergence almost complete. Based on first-generation populations these areas potentially most likely to have heavy second generation. Moth emergence in northern area 40 percent. Field observations indicate egg laying will be spread over period of 2-3 weeks. (Sur. Bul.). MICHIGAN - Peak collection from Monroe County blacklight station totaled 249 moths on July 30; 374 moths (143 females, 231 males) collected nights of July 29-31. Montcalm County station trapped 134 moths week ending August 1. Sporadic emergence expected throughout August. Activity indicates increase over second-brood counts of previous seasons. Growers of susceptible crops must be alert until end of this growing season. (Newman).

OHIO - O. nubilalis infested 28 percent of Ashtabula County field corn; averaged one larva per plant. Averaged 18 percent infestation in Trumbull County, with 1.5 larvae per plant. In Columbiana County, 20 percent of plants infested with average of 1.8 larvae per plant. (Andress). VIRGINIA - Generally less than 20 percent of stalks infested in New Kent, King and Queen, Middlesex, Essex, Hanover, and King William Counties. Infestation ranged 25-50 percent in Richmond, Lancaster, Northumberland, and Westmoreland Counties. Generally, infestations of less than 50 percent not economic. (Allen). MARYLAND - Moth flights averaged 21 per night in Queen Annes County, 10 per night in Dorchester County, and less than 1 per night in Worcester County. Infestations of 60-100 percent can be found in all counties. Most fields remain light to moderate (10-50 percent). (U. Md., Ent. Dept.). DELAWARE - Adults averaged 42 per night in blacklight trap at Bridgeville, Sussex County. Larval infestation 15 percent on untreated pepper fruit. No fresh egg masses noted on pepper plants as of August 5 at Bridgeville. (Lesiewicz). New JERSEY - Fresh egg masses observed on sweet corn August 2 in East Brunswick area, Middlesex County. (Ins.-Dis. Newsltr.).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Continues troublesome on grain sorghum in Jones, Baylor, Hardeman, and Haskell Counties in whorls. Feeding on young grain sorghum in Gonzales and surrounding counties. In some fields 30-50 percent of foliage consumed. (Boring et al.). OKLAHOMA - Moderate to heavy on sorghum in western half of State. (Okla. Coop. Sur.). KANSAS - Heavy in whorls of 40-inch late-lanted corn near Chapman, Dickinson County. (Bell). WISCONSIN - Early instars evident on corn leaves in some Manitowoc County fields. Few adults collected in blacklight trap at Seymour, Outagamie County. (Wis. Ins. Sur.). NEW JERSEY - Moderate on sweet corn in East Brunswick area, Middlesex County. (Ins.-Dis. Newsltr.). MARYLAND - Light and spotty on Eastern Shore corn. Heaviest infestation near Chesterville, Kent County; 2 percent of 100-acre stand damaged. (U. Md., Ent. Dept.). KENTUCKY - Larvae damaged corn in Hopkins, Henderson, and Daviess Counties. Averaged one larva per stalk in one field. (Barnett). TENNESSEE - Observed on small corn in Franklin County; scattered within fields; second instars feeding in whorls. (Mullett).

VARIEGATED CUTWORM (*Peridroma saucia*) - NEBRASKA - Unusually abundant in field corn in Seward, York, Polk, and Butler Counties. Light in most fields, but in others ranged 1-3 per ear on 50-75 percent of plants. Most feeding on silks and developing grain at ear tips. Ranged third to last instar. (Keith et al.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Second to fourth instars light, averaged less than 1 per 20 ears in 2 Hall County fields. No egg masses observed. (Keith et al.).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - MISSOURI - Pollinated corn in northwest area averaged one adult per plant. (Thomas). Adults collected on corn in Pike County by J.L. Huggans. This is a new county record. (Hanning). UTAH - Severely injured several hundred acres of field and sweet corn in Cache and Weber Counties this season. Growers in Richmond area report damage was less severe in 1970, but yields were reduced. Much home garden sweet corn totally lost and field corn yields only 33-50 percent of normal in severely infested fields in this area of Cache County. (Knowlton, Roberts). WYOMING - Damage severe to corn roots; lodged 40-70 (average 50) percent of corn in field near Douglas, Converse County. Damage noted in 2 fields not previously having infestations in area. Adults averaged 7-8 per plant. Much damage to corn in La Grange area, Goshen County. (Burkhardt). MONTANA - Tassel damage noted in field and sweet corn from Columbus in Stillwater County along Yellowstone River through Yellowstone, Treasure, Rosebud, Custer, Prairie, Dawson, and Richland Counties. Adults averaged 5 per plant in Sweet Grass County field. (Pratt).

CORN ROOTWORMS (*Diabrotica* spp.) - WISCONSIN - Adults increasing in all corn-growing areas. Larvae, pupae, and new adults numerous on roots of volunteer corn in Janesville area August 2. Average of 4 late instars, 6 pupae, and 6 new adults noted in soil beneath each plant. Up to 14 adults observed on aboveground portions of volunteer plants. Severe larval damage evident in some untreated fields in corn for 2-3 years. Report from Iowa County reveals total loss of crop in field planted to corn for second year, up to 12 adults per leaf noted. *D. virgifera* (western corn rootworm) dominant throughout southwest quarter of State and in scattered localities as far east as Dodge and Fond du Lac Counties. (Wis. Ins. Sur.). INDIANA - *D. longicornis* (northern corn rootworm) adults appearing in light traps in northern and central areas. (Huber). MINNESOTA - Cool weather slowed *Diabrotica* spp. emergence and adult activity. Most infested fields in southeast, south-central, and southwest districts with 2-3 adults per plant. Counts 10+ per plant in few fields in Olmsted and Mower Counties. (Minn. Pest Rpt.). KANSAS - *D. longicornis* and *D. virgifera* adult averages per corn plant by county: Leavenworth up to 11, Doniphan up to 4, Wyandotte up to 7, Johnson up to 4, Miami up to 2, and Franklin up to 2. In field corn surveyed in west-central and southwest districts, maximum adult populations (mostly *D. virgifera*) 2 per plant (Lane and Wichita Counties). (Bell).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Infestations continue to range 40-100 percent on field corn in Frederick, Kent, Talbot, and Carroll Counties. (U. Md., Ent. Dept.).

SPIDER MITES - UTAH - *Tetranychus urticae* (twospotted spider mite) and *Oligonychus pratensis* (Banks grass mite) most serious corn problem in Utah County (Horn), Emery County (Day), and Sevier County (Ogden). COLORADO - *O. pratensis* generally light on corn in Arkansas Valley following control efforts and unseasonable moisture and temperatures. Some fields south of La Junta and Rocky Ford in Otero County show moderate to heavy populations and damage. (Schweissing). TEXAS - Moderate increase of *O. pratensis* in many fields of grain sorghum in preboot stage in El Paso and Hudspeth Counties. Light in Pecos and Reeves Counties, many grain sorghum fields in hard dough stage. Infestations in grain sorghum decreased during past week due to cool weather and rain. (Neeb, Rummel). KANSAS - Some cornfields treated for what is probably *O. pratensis* in western districts as far north as Thomas County and insecticides used appear to be giving little control. (Bell).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Adults light to moderate in few sorghum fields in Wagoner and Muskogee Counties. Sorghum in this area mostly in medium to hard dough stage and not susceptible to midge damage. (Okla. Coop. Sur.). TEXAS - Increased in Rolling Plains area during past few weeks. Grain sorghum which is blooming or will bloom at later date subject to possible attack. Scattered reports also from Coastal Bend area on late sorghum. On South Plains, emergence from grain sorghum heads continues very light. (Rummel et al.). ARKANSAS - Found in 4 of 22 sorghum fields in bloom. Most past stage for infestation. Small acreages of late sorghum which will be in bloom next 2 weeks should be watched closely. Infestations expected to be much heavier on late crop. (Boyer).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Counts of 3-9 in silking corn ears at Cornish and Lewiston, Cache County. (Knowlton, Cazier).

SMALL GRAINS

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Economic in few late seeded fields of barley in Cavalier County. Ranged up to 53 (averaged 33) adult and young thrips per leaf sheath. Barley in medium dough stage. Premature drying of flag leaves evident. (Brandvik).

ENGLISH GRAIN APHID (Macrosiphum avenae) - NORTH DAKOTA - This aphid, Rhopalosiphum fitchii (apple grain aphid), and/or R. padi widespread in north-central counties. Ranged up to 30 per head in wheat, barley, and oats. Field averages ranged 2-8 per head. M. avenae dominant. (Brandvik. Kaatz). WYOMING - Heavy on malt barley in 30 percent of 120-acre field. Leaves turning yellow. Controls necessary. (Parshall).

TURF, PASTURES, RANGELAND

BUCK MOTH (Hemileuca maia) - UTAH - Larvae caused heavy damage to snowberry bushes in mountains of Iron County; 2,000 to 3,000 acres affected. (Sjoblom).

CHINCH BUG (Blissus leucopterus leucopterus) - INDIANA - Adults 40 per 100 sweeps of alfalfa in field which is about 50 percent grass in west-central district. Noneconomic numbers reported earlier from Ft. Wayne area. (Meyer).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - NEW YORK - Heavy adult aestivation flights occurred July 20-31. Flight July 23 particularly heavy in Ithaca area. Parasitism by Tetrastichus incertus (a eulophid wasp) remains light for unknown reason; suspect population displacement by Bathyplectes curculionis (an ichneumon). (N.Y. Wkly. Rpt.). NEW MEXICO - Adults 1-2 and larvae 1-5 per 25 sweeps of alfalfa in Los Lunas area, Valencia County. (Heninger). WYOMING - Counts decreased, ranged 0-6 per 10 sweeps in few fields in Goshen County. Ranged 4-18 (average 10) per 10 sweeps in 4 Platte County fields. In Park County, ranged 0-8 in one field, 18-40 in another, and 60-82 per 10 sweeps in third field. (Burkhardt).

PEA LEAF WEEVIL (Sitona lineata) - WASHINGTON - New adults collected in alfalfa seed fields in Adams and Walla Walla Counties; these are new county records. (Johansen).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - WASHINGTON - Moderate to spotty severe larval damage on alfalfa in Whitman County. (Harwood). NEVADA - Counts of 5-6 per sweep of alfalfa at Reno, Washoe County. (Arnett).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Increasing in south-central area. Infestations on forage crops and pastures in De Witt, Goliad, Gonzales, and Guadalupe Counties. In Waller County, building up on pastureland. (Cole, Green).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Adults and nymphs 10-50+ per 25 sweeps of alfalfa near Los Lunas, Valencia County. (Heninger). WASHINGTON - L. hesperus and L. elisus (3+ per sweep) noted July 30 affecting bloom of alfalfa grown for seed at Toppenish, Yakima County. (Landis). ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: 320-480 in 2 fields on Yuma Mesa, 250-990 in 2 fields at Yuma Valley. (Ariz. Coop. Sur.). WYOMING - Lygus sp. per 10 sweeps ranged 14-40 in Goshen County alfalfa, 22-48 in Platte County, and 0-30 in Park County. (Burkhardt).

TARNISHED PLANT BUG (Lygus lineolaris) - NEW YORK - Nymphs and adults increasing. Nymphs 1-2 per sweep in alfalfa seed field near Ithaca, Tompkins County, seed damage evident. (N.Y. Wkly. Rpt., Aug. 2). OHIO - Adults averaged 3+ per sweep in red clover in Ashtabula County. (Andress). OKLAHOMA - Adults averaged 45 per 10 sweeps in field of seed alfalfa in Wagoner County. (Okla. Coop. Sur.).

PEA APHID (Acyrthosiphon pisum) - WYOMING - Heavy in many alfalfa fields, especially in Park County; ranged 300-800 (average 560) per 10 sweeps to as high as 640-820 (average 720) per 10 sweeps. Ranged 100-160 (average 128) per 10 sweeps in 2 Goshen County fields, and 140-240 per 10 sweeps in Platte County. (Parshall).

SOYBEANS

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Caused much damage in one soybean field in Geneva County. Some girdling and breaking of plants observed in all fields examined in Greene, Sumter, and Bibb Counties. (Reynolds et al.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Damaged soybeans in several fields in Geneva County. (Reynolds).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MARYLAND - Heavy and caused defoliation in 1 percent of total acreage planted on Eastern Shore. Most fields continue to be uninfested. (U. Md., Ent. Dept.).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Moderate in peanuts in Atoka County. (Okla. Coop. Sur.). TEXAS - Generally, infestations decreased significantly in central area. Still moderate in dryland peanuts. Percent infestation by county: Callahan 11, Erath 21, Brown 28, Eastland 35, Comanche 22, Hood 8, and Hill 20. (Hoelscher).

GRANULATE CUTWORM (Feltia subterranea) - ALABAMA - Damaged several peanut fields in Dale County. (Estes).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, surveys indicate buildup. Punctured squares averaged 27.8 (maximum 37.7) percent in 5 fields. Adults numerous in all fields. (Cowan et al.). OKLAHOMA - Punctured squares ranged 60-75 percent in several fields in Caddo and Greer Counties. Ranged 10-25 percent in Marshall County. In Choska area, Wagoner County, no punctured squares found on plants but last instars (and few pupae) common in squares on ground (0-5 per foot of row). (Okla. Coop. Sur.). ARKANSAS - Infestations increasing. Of 6,896 fields surveyed, 4,939 infested. Treatments needed in 1,022 fields. (Boyer et al.). LOUISIANA - In Madison Parish, total of 2,643 weevils taken on traps; 1,142 on non-sticky traps and 1,501 on sticky traps as of July 29. (Cleveland et al.). MISSISSIPPI - Percent average infestation ranged 6-12 in Monroe, Holmes, Washington, and Rankin Counties. Some fields in Pike County with 85 percent infestation. (Robinson). In delta counties, punctured squares averaged 7.4 (maximum 33.5) percent in 10 of 11 fields. In pheromone-baited wing traps, total to date in Washington County 54, in Bolivar

County 1,202. (Pfrimmer et al.). ALABAMA - *Anthonomus grandis* remains heavy and general in south and central areas. Controls general and effective; infestation ranged 15-45 percent. Heavier counts in isolated areas in northern areas. Expect economic levels in northern areas within 10-15 days in larger fields. (McQueen). TENNESSEE - Conditions ideal for further increase. Second-generation weevils appearing. Control in order for most fields throughout regularly infested area. (Locke). SOUTH CAROLINA - Infestations in Aiken County averaged 8.1 percent; high count 39 percent in one field. (Evans). Weevils migrating in Marlboro County. (Smith).

BOLLWORMS (*Heliothis* spp.) - ARIZONA - *H. zea* larvae increasing in 430 fields checked in Graham County. An estimated 75 percent of fields treated at Marana and Avra Valley, Pima County. (Ariz. Coop. Sur.). NEW MEXICO - *Heliothis* spp. caused extensive damage in Mesilla Valley cotton fields not treated while larvae small. (N.M. Coop. Rpt.). TEXAS - In McLennan and Falls Counties, eggs averaged 16 (maximum 33.4) and larvae 5.7 (maximum 12) per 100 terminals in 5 fields. Injured squares averaged 2.7 (maximum 3.5) percent and injured bolls averaged 1 (maximum 1.2) percent. Light trap catches remain heavy. Of 73 larvae collected from cotton and identified, 44 or 60 percent *H. virescens*. (Cowan et al.). OKLAHOMA - Egg and larval counts ranged 0-8 percent in cotton in Wagoner, Muskogee, and Sequoyah Counties. Ranged 3-10 percent in Grady County and 10-15 percent in Duke area, Jackson County. Averaged 10 percent in Greer County, several early fields damaged in Washita County. (Okla. Coop. Sur.). ARKANSAS - Increased. Peak moth flights July 6-22 for State. Of 6,896 fields surveyed, 5,199 infested and 1,757 need treatments. (Boyer et al.). LOUISIANA - In Madison Parish for period ending July 29, damaged squares in 83 of 104 plots. Infestations ranged 1-9 (averaged 2) percent. Of 198 eggs collected and identified, 165 *Heliothis* spp., 17 *Feltia subterranea* (granulate cutworm), and 16 *Trichoplusia ni* (cabbage looper). (Cleveland et al.).

MISSISSIPPI - Percent average infestation ranged 1.5-10 in Monroe, Washington, Holmes, and Rankin Counties. Rains hindered controls in delta counties, watch cotton. (Robinson). In delta counties, moth catches declined. Very few eggs or small larvae, most fourth and fifth instars. Injured squares averaged 4.77 (maximum 11.5) percent in 11 fields. (Pfrimmer et al.). TENNESSEE - *H. zea* continues to increase in rank cotton over western area. Many fields above control levels. Some boll injury. (Locke). NORTH CAROLINA - *Heliothis* spp. egg counts increased significantly on cotton near Clayton, Johnston County, and at Lewiston, Bertie County. (Bradley). SOUTH CAROLINA - Not serious to date in Aiken County; however, light trap catches indicate possible problem. Number of moths collected more than double catch of previous week. (Evans). Eggs being found in many Marlboro County fields. Moths flying, larvae appearing in many fields. (Smith).

BEET ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - General infestations noted in Dona Ana County, but in most cases infestations have not warranted chemical control. (N.M. Coop. Rpt.).

COTTON FLEAHOPPER (*Pseudatomoscelis seriatus*) - OKLAHOMA - Continues to cause much damage to young cotton in many southwest and west-central counties. (Okla. Coop. Sur.).

TOBACCO

ASIATIC OAK WEEVIL (*Cyrtepistomus castaneus*) - KENTUCKY - Adults ranged 5-10 per tobacco plant in Breathitt, Perry, Owsley, and Wolfe Counties. (Barnett).

SUGAR BEETS

GARDEN WEBWORM (*Loxostege rantalis*) - WASHINGTON - Larvae causing "ragging" of sugar beet leaves at Toppenish, Yakima County. Not very abundant at present but large numbers of adults suggest impending problem. (Landis).

MISCELLANEOUS FIELD CROPS

A GALL MIDGE - MINNESOTA - Undetermined species causing much damage to sunflowers in Red River Valley. Infested area appears to extend from southern edge of western Polk County, through Norman County, and as far south as U.S. Highway 10 in Clay County. Infestations most severe in southern Norman County. Damage ranged light to very heavy. In some fields, 75-90 percent of blossoms infested. When populations heavy, little or no seed formed except for ring of developing seed around edge of head. Time for control probably past. Sunflowers just beginning to blossom north of infested area. No infestations found in Marshall, Pennington, or Kittson Counties. (Minn. Pest Rpt.).

POTATOES, TOMATOES, PEPPERS

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Buildup in several Washington County potato plantings. About 300 acres must be treated and additional 200 will probably need treatment. Counts in Cipole and Sherwood areas August 2 indicated up to 10 larvae per square foot in portions of fields showing extensive defoliation. Larval feeding on exposed tubers also evident. All damage reported to date restricted to Norgold and Kennebec varieties. Plantings of Hages, Gems, and Norchips also examined. Survey of major potato-growing areas in adjacent portions of Clackamas County revealed economic infestation on 18 acres located near Canby; larval counts as high as 20 per square yard. (Albee et al.).

BEET ARMYWORM (Spodoptera exigua) - NEW MEXICO - Seriously damaged chile peppers in Dona Ana County; treatment required. (N.M. Coop. Rpt.).

POTATO TUBERWORM (Phthorimaea operculella) - MICHIGAN - Heavy infestation in small patch of home-grown potatoes next to commercial tomato hothouse complex in Monroe County. Surveys of commercial potato plantings negative in areas of Monroe County with past histories of infestation. (Hanna).

TOMATO PINWORM (Keiferia lycopersicella) - MISSISSIPPI - Increased in tomato fields and greenhouses near Crystal Springs in Copiah County. Caused moderate to heavy damage to foliage and fruit. Insecticidal control attempted, results fair. (Robinson).

GREEN PEACH APHID (Myzus persicae) - NEW MEXICO - Light to heavy and damaging chile peppers in Mesilla Valley, Dona Ana County. Control difficult. (N.M. Coop. Rpt.).

BEANS AND PEAS

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - Small increase of moth catches at Montcalm County blacklight station. (Newman).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - IDAHO - Economic and controls needed throughout Clearwater, Idaho, Nez Perce, Latah, and Lewis Counties, in lentil and peafields July 26 to August 4. (Portman).

GENERAL VEGETABLES

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Larvae in all table beet fields in Eugene and Junction City area, Lance County. Foliar damage evident in most plantings but controls effective. One 50-acre field near Junction City, examined August 5, showed extensive damage to foliage in 10 rows along one edge of field. Late instars feeding on exposed portions of beets. Estimated 50 percent of beets in this peripheral region showed some feeding damage. (Beglau et al.).

ONION THRIPS (Thrips tabaci) - COLORADO - Up to 75 per plant, some damage in onion fields of Arkansas Valley. (Schweissing).

DECIDUOUS FRUITS AND NUTS

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Flies taken in all locations where traps placed. Two taken August 2 at New Ulm where none previously reported. (Minn. Pest Rpt.). MICHIGAN - Emergence increasing; 11 flies recorded August 2 in emergence cage at Paw Paw, Van Buren County, 27 at another location. Bait-trap counts ranged 39-46 in Muskegon County blueberry plantation. Peak emergence expected about mid-August. Threat of fruit damage could last through harvest. (Thompson). MAINE - Adult emergence decreasing; peak reached week of July 26. (Gall).

CHERRY FRUIT FLY (Rhagoletis cingulata) - MICHIGAN - Emergence about ended for season. Last fly trapped in area south of Grand Rapids July 26. Flies range 5-10 per week in baited traps from Hart and Shelby area northward. (Thompson).

CODLING MOTH (Laspeyresia pomonella) - WASHINGTON - First second-brood entries in apple August 3 at Grandview, Yakima County. (Johnson).

PEAR PSYLLA (Psylla pyricola) - MICHIGAN - Inspection of leaf spurs on untreated trees indicates new generation at Fennville, Allegan County. Counts per 10 spurs August 4 showed 229 eggs, 206 nymphs, and 43 winged nymphs. Immediate application of recommended chemicals should effectively manage population. (Thompson).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Adult emergence in lower Sacramento Valley and upper San Joaquin Valley about double that of previous week; some growers will treat. Dooryard trees usually treated first time between July 24 and August 8. Emergence normal this season. (Cal. Coop. Rpt.). OREGON - First adults (3) in Multnomah County taken in Frick traps in North Portland area August 4. (Anderson). First adults (3) in Douglas County, trapped in Franquette walnut orchards at Riddle July 28; total of 108 trapped in area by August 2. Total of 15 adults taken in traps at Dillard August 2. (Passon). First adults from Jackson County reported at Medford August 3. (Berry).

WALNUT CATERPILLAR (Datana integerrima) - TENNESSEE - Defoliated 50 percent of pecan trees in localized area of Dyer County. (Stafford). Defoliating walnut trees in many parts of upper eastern area. (Gordon). NORTH CAROLINA - Larvae reported damaging pecan, hickory, and walnut. Some small trees completely defoliated. Observations indicate more damage than in 1970. (Green).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Second-generation larvae caused 10 percent damage in Marshall County. (Okla. Coop. Sur.).

CITRUS

Insect Situation in Florida - End of July - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 81 (norm 63) percent of groves; economic in 71 (norm 44) percent. Population above normal and at very high level on leaves and fruit. Decrease expected after mid-August, will continue in high range. All districts high. CITRUS RED MITE (Panonychus citri) infested 66 (norm 63) percent of groves; economic in 34 (norm 36) percent. Population near normal and at moderate level. Further decrease to low level will occur in August. Highest districts south, west, and central. TEXAS CITRUS MITE (Eutetranychus banksi) infested 72 (norm 69) percent of groves; economic in 45 (norm 43) percent. Population near normal but still in high range. Will decrease rapidly to very low level in August. Highest districts central, south, and east. GLOVER SCALE (Lepidosaphes gloverii) infested 72 (norm 76) percent of groves; economic in 14 (norm 26) percent. Below normal and dropped to moderate level. Little change expected. Highest districts south and west. PURPLE SCALE (L. beckii) infested 65 (norm 68) percent of groves; economic in 5 (norm 6) percent. CHAFF SCALE (Parlatoria pergandii) infested 41 (norm 57) percent of groves; economic in 2 (norm 6) percent. YELLOW SCALE (Aonidiella citrina) infested 35 (norm 63) percent of groves; economic in none (norm 8) percent. Populations of these scales below normal and in low range. Further decrease predicted. No severe infestations expected in any district.

BLACK SCALE (Parlatoria pergandii) infested 68 (norm 81) percent; economic in 41 (norm 63) percent. Statewide population continued in high range but below normal. Little change expected. Infestations vary greatly in severity. Some heavy infestations will occur in all districts but not likely to become important this year. Highest districts east, south, and central. An ARMORED SCALE (Unaspis citri) infested 28 percent of groves; economic in 20 percent. Population greater than in any prior July. Increase predicted. WHITEFLIES infested 75 percent of groves; economic in 26 percent. Continued in high range and above normal. Decrease expected. Highest district east. MEALYBUGS infested 57 percent of groves; economic in 12 percent. Below normal and low. Decrease predicted. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CALIFORNIA RED SCALE (Aonidiella aurantii) - ARIZONA - Additional reinfestation found at Tucson, Pima County. (Ariz. Coop. Sur.).

COTTONYCUSHION SCALE (Icerya purchasi) - ARIZONA - New infestation found in lemon grove at Yuma, Yuma County. (Ariz. Coop. Sur.).

FOREST AND SHADE TREES

CONIFER SAWFLIES (Neodiprion spp.) - OKLAHOMA - Heavy on pine trees in numerous spots in Pushmataha, Latimer, Le Flore, and Atoka Counties. Apparently second generation of same species present in area in May and June. (Okla. Coop. Sur.). FLORIDA - Second-generation larvae of N. excitans caused average of 50 percent defoliation of 8-year-old trees on 450 acres of loblolly pine near Steinhatchee Springs, Taylor County. (Walker). Larvae cocooned by August 2; one or two additional generations expected during 1971. (Wilkinson). CALIFORNIA - Thousands of N. abietis (balsam fir sawfly) infesting white fir reproduction, pole, and sapling trees in Happy Valley, Pinman Peak, Little Long Valley, Walker Mine, Bagley Pass, and Crocher Mountain areas of Plumas National Forest. Infestations increasing in this and more northern areas. (Intorf, USFS).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - CALIFORNIA - Infesting pine trees at 4,300-foot elevation in Springville, Tulare County; has been problem in many scattered areas statewide. (Cal. Coop. Rpt.). WEST VIRGINIA - Damage light to moderate on red pine and Scotch pine; 10 percent of 4-acre block damaged in Morgan County. (W. Va. Ins. Sur.).

AN APHID (Eulachnus agilis) - OHIO - Light numbers reported on Scotch pine in northeast area. Anticipated August peak has not occurred in most plantations. Necessity for chemical control of fall populations questionable. (Balderston, Nielsen).

SPRUCE SPIDER MITE (Oligonychus ununguis) - WASHINGTON - Severely damaged Norway spruce by August 3 at Colfax, Whitman County. (Entenmann, Retan).

ELM LEAF BEETLE (Pyrrhalta luteola) - OREGON - Larvae completely skeletonized leaves of all untreated elms along 0.50-mile stretch along Lake Oswego, Clackamas County. Survey August 4 revealed heavy numbers of pupae in grass clippings and beneath fallen leaves around bases of infested trees. Numerous pupae seen in moss growing on tree trunks. First-generation adults emerging, moving up into trees. (Penrose, Humphrey).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - NORTH DAKOTA - Eggs hatching in Fort Totten area, Benson County. Up to 70 first and second-instar larvae on basswood leaves; 50+ percent of leaves on some branches skeletonized. Defoliation occurred in area in 1970. (Brandvik). MARYLAND - Defoliated 10 acres of woodland near Doncaster, Charles County. Infestations light to heavy over 8-square-mile area between Doncaster and Riverside on State Highway 224 in Charles County. (U. Md., Ent. Dept.).

PACIFIC TENT CATERPILLAR (Malacosoma constrictum) - OREGON - Blacklight trap catches at Macleay, Marion County, indicate adult flight activity near complete. (Long, Westcott).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 9 cases reported in U.S. August 1-7 as follows: TEXAS - Bowie 4, Kinney 1; ARKANSAS - Little Rock 3; ARIZONA - Cochise 1. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Ranged up to 25 per face on cows in Monroe County. (Robinson). KENTUCKY - Heavy (15 or more per head) on livestock in Russell, Wayne, Clinton, and Franklin Counties. (Barnett). WISCONSIN - Light to moderate on cattle in most areas. Pinkeye problem in young cattle, apparently associated with this insect, reported near Verona in Dane County. (Wis. Ins. Sur.). IOWA - Ranged 5-20 (average 9.9) per face on untreated cow herd on pasture in Dallas County. (Iowa Ins. Sur.). NEBRASKA - Ranged 20-25 per face on Lincoln County range herds. (Campbell). UTAH - Continued to increase in several Box Elder, Cache, and Weber County localities; much annoyance to horses and cattle reported. (Knowlton, Boyer).

HOUSE FLY (Musca domestica) - NEBRASKA - Averaged 25-30 per Scudder grid in feedlots examined near North Platte, Lincoln County. (Campbell).

MOSQUITOES - OHIO - Females averaged 38.4 per trap per night in 5 traps operated nights of July 26 and 27 in Franklin County; ranged 15-203 per trap. (Dept. Health). MINNESOTA - Cool nights restricted movement, resulting in decrease in trap and evening bite collections. Trap collections for week ending July 31 totaled 6,061 females compared with 16,000+ previous week. Aedes vexans still 81 percent of total. Coquillettidia perturbans, well past peak numbers, comprised 7 percent of specimens. A. vexans dominant in daytime and evening bite collections. A. fitchii, A. stimulans, and A. excrucians still taken in bite collections. (Minn. Pest Rpt.). ARKANSAS - Averaged about 500 per light trap per night in Lonoke County; about half Psorophora confinnis and remainder Anopheles spp. (Boyer).

Venezuelan Equine Encephalomyelitis Situation - Federal quarantines had been invoked in Texas, Arkansas, Louisiana, Oklahoma, New Mexico, and Mississippi as of August 3. In south Texas, confirmed cases of this disease have been reported in 11 coastal counties. In the quarantined States, a total of 1,100,000 horses have been vaccinated. In the Cameron County area of Texas, the virus has been isolated from 12 species of mosquitoes. (Anim. Health Div.). Aerial spray applications in Texas and Louisiana expected to be completed by August 13, with over 12,000,000 aggregate acres treated. (PPD).

HORN FLY (Haematobia irritans) - IOWA - Ranged 0-200 (average 43) per side on untreated cow herd on pasture in Dallas County. (Iowa Ins. Sur.). NEBRASKA - Ranged 700-800 per head on cattle along Platte River and in canyon pastures in Lincoln County. (Campbell). OKLAHOMA - Heavy on cattle in Cotton County, moderate in Garfield, Osage, and Carter Counties. (Okla. Coop. Sur.). TEXAS - Averaged 87 per animal on beef cattle in Mills County during period July 17 to August 3. Populations increasing after recent rains. (Morrison, Smith). UTAH - Numerous on unsprayed cattle in Box Elder, Davis, and Weber Counties. (Knowlton, Boyer).

STABLE FLY (Stomoxys calcitrans) - IOWA - Ranged 1-6 (average 3.1) per leg on untreated cow herd on pasture in Dallas County. (Iowa Ins. Sur.). NEBRASKA - Ranged 25-30 per leg of cattle in feedlots examined near North Platte, Lincoln County. (Campbell).

HOUSEHOLDS AND STRUCTURES

OLDHOUSE BORER (Hylotrupes bajulus) - TENNESSEE - Specimen collected from stacked lumber in Sevier County. Controls applied. This is a new county record. (Williams, July 30).

BENEFICIAL INSECTS

A BRACONID (*Lysiphlebus testaceipes*) - OKLAHOMA - Increasing rapidly on sorghum infested by *Schizaphis graminum* (greenbug) in Texas County; parasitism 2-10 percent in many fields, up to 60 percent in one field. *L. testaceipes* parasitized 10 percent of aphid (probably *Aphis illinoisensis* (grapevine aphid)) infesting grapevines in Mayes County. (Okla. Coop. Sur.).

LADY BEETLES - OKLAHOMA - *Hippodamia convergens* (convergent lady beetle) common in aphid-infested sorghum in Texas County. Averaged 1 or more egg masses per plant in most fields. Adults of *H. convergens* and *Coleomagilla maculata* moderate in most soybean fields in Wagoner and Muskogee Counties. (Okla. Coop. Sur.).

MELYRID BEETLES (*Collops* spp.) - ARIZONA - Adults averaged 100 per 100 sweeps of alfalfa at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CATTLE TICKS (*Boophilus* spp.) - TEXAS - Total of 100 *B. annulatus* (cattle tick) and *B. microplus* (southern cattle tick) males, females, and nymphs identified from bovine and equine hosts in Cameron and Webb Counties during period July 1-18. (Anim. Health Div.).

GRASSHOPPERS - IDAHO - Three thin flights of *Melanoplus sanguinipes* observed moving to higher elevation in Lewiston area of Nez Perce County. About 58,000 acres sprayed in Magic Valley area. (Portman). NEVADA - *Oedaleonotus enigma* ranged 15-20 per square yard on 1,000 acres of rangeland in Horse Creek area near Orovada, Humboldt County. *M. bivittatus* and *M. sanguinipes* ranged 8-12 per square yard on 250 acres of alfalfa near Battle Mountain, Lander County. (Rowe). UTAH - Unspecified adults and nymphs moving from foothills and other range lands into crops and home gardens along "Wasatch front" in Box Elder, Cache, Davis, Weber, and Salt Lake Counties. (Knowlton et al.). Heavy population damaged alfalfa field at Logan, Cache County. Adults, mostly *M. sanguinipes*, ranged 20-50 per square yard in margins of alfalfa at Richmond. (Knowlton). *Camnula pellucida* threatening crops in Manti and Ephraim area and unspecified species moving from range into crops in Wales area of Sanpete County. Damaged 0.50 acre of raspberries at Ephraim. (Herring). NEW MEXICO - Grasshoppers ranged 5-15 per 25 sweeps in Valencia County alfalfa. (Heninger).

OKLAHOMA - By mid-July, grasshoppers 90 percent adults in most areas, some egg deposition underway. In panhandle counties, many third and fourth instars still present week of July 19. Parasites and predators, mainly red mites and robber flies, noted. Cooperative control programs involving 73,355 acres of grassland in Carter, Jefferson, Love, and Ellis Counties completed in July; results ranged from 90-95 percent kill in short grass to 75-80 percent kill in rough, weedy, heavy vegetation areas. (Okla. Coop. Sur.). NEBRASKA - *Melanoplus* spp. ranged 15-20 per square yard in roadside ditches in Otoe County. Scattered soybean fields with outside 12 rows showing moderate to heavy defoliation. (Berogan).

SOUTH DAKOTA - Grasshoppers damaged crops in western Lawrence and Meade Counties. Counts per square yard in alfalfa near Piedmont, Meade County, ranged 5-8 in fields and 8-10 in borders. Population about 50 percent *M. bivittatus* adults and 50 percent *M. femurrubrum* nymphs. (Jones). Grasshoppers damaged 200 acres of wheat and alfalfa west of Spearfish, Lawrence County; ranged 20-30 per square yard in fields. (Rezek). Up to 40 per square yard in margins in Sanborn County, 30 in Brown County; populations spotty in both counties and light to moderate in areas. Infestations generally moderate in Spink, Faulk, and Davison Counties, light in Edmunds, McPherson, and Hanson Counties. *M. bivittatus* and *M. differentials* dominant in areas of heavy infestation; *M. femurrubrum* common where infestations light. (Fransen). NORTH DAKOTA - Grasshopper adults economic in southeast Cass and northeast Sargent Counties; light in other parts of Cass and Sargent Counties and in Dickey, Emmons, and Burleigh Counties. *M. bivittatus* dominant in most economic areas. Controls still underway in Cass County to protect soybeans. (Grasser). MINNESOTA - Grasshoppers again economic in alfalfa in Otter Tail County. Roadside and field margin counts of 20-26 per square yard found in Wilkin and Clay Counties. Some movement into sunflowers and soybeans observed. Sugar beet field east of Moorhead, Clay County, with 20 per square yard after roadside mowed. M. bivittatus dominant. (Minn. Pest Rpt.).

GYPSY MOTH (Porthetria dispar) - VIRGINIA - Single male moths trapped at Falls Church High School, Fairfax County; near Copeville, Northampton County; in Independent City of Chesapeake; on Assateague Island, Accomack County. First moths trapped at these locations. Determinations by E.L. Todd. (PPD).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA - Specimens taken at Fort Meyers, Lee County, by J.H. Brown July 30, 1971. Determined by V.H. Owens, confirmed by D.R. Smith. This is a new county record. (PPD). ALABAMA - Infestations increased in Fayette County this season. Several growers applying controls this period. (Tucker).

JAPANESE BEETLE (Popillia japonica) - WEST VIRGINIA - Adults causing heavy defoliation (80-90 percent) of elm, sassafrass, apple, and peach in Hardy, Hampshire, Berkeley, Morgan, Nicholas, Greenbrier, and Pocahontas Counties. (W. Va. Ins. Sur.). KENTUCKY - Light on roses at Winchester, Clark County, on July 15, 1971. Collected by J.M. Henderson. This is a new county record. Single adults on rose at Versailles, Woodford County; Cynthiana, Harrison County; Stamping Ground, Scott County; adult taken at Calvert City, Marshall County. These are first adults taken at these locations. Determinations by R.D. Gordon. (PPD). TENNESSEE - Caused some damage to tobacco in parts of eastern area where populations very heavy. (Gordon). Single adult trapped in Pickett County during July is first specimen collected in this county. (PPD).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Eggs began hatching about two weeks ago in Lincoln County. (Watts).

WHITEFRINGED BEETLES (Graphognathus spp.) - TENNESSEE - Heavy populations observed in Knox County; damaged roses and azaleas. (Williams).

Weather of the week continued from page 580.

became centered over the Ohio River Valley. Warm air flowed northward back of the high. The northern Great Plains warmed to the 90's. Williston, North Dakota, registered 101° Saturday. A warming trend occurred over the Northeast, but not sufficient to offset the cool weather earlier in the week. Temperatures averaged warmer than normal west of the Rocky Mountains and over parts of the northern Great Plains, and below normal over most of the rest of the Nation. Most of the central and southern Great Plains averaged 6° to 14° cooler than normal.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK
AUGUST 1971

The National Weather Service's 30-day outlook for August is for temperatures to average below seasonal normals over the eastern half of the Nation except for near to above normal in the Northeast and in Florida. Above normal temperatures are indicated west of the Divide except for near normal along the California coast. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal over the central Plains, the middle Mississippi Valley, and the south Atlantic Coast States. Subnormal totals are indicated for the northern Plains, the Northwest and most of California. Elsewhere near normal totals are expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

HAWAII INSECT REPORT

New Western Hemisphere Records - A REDUVIID BUG (Haematoecha rubescens (Distant)) collected in rotten branch at Tantalus, Oahu, by L. Mochizuki, November 14, 1970. Second specimen collected in home by I. Kaiser at Alewa Heights on January 2, 1971. Eight additional specimens collected in building at Honolulu International Airport by J. Hane, D. Nagatani, and C. Taira during period January 14-21. Determined by R.C. Froeschner. The genus occurs in China and the islands of Honshu, Shikoku, and Kyushu, Japan, where it is apparently a predator of other insects. (Kawamura). Seven specimens of an OEDEMERID (Ananca kanack (Fairmarie)) collected at light at Kapoho Beach, Hawaii, by L. Santo April 11, 1971. Specimen taken from schooner returning from Line Islands in June 1964 was determined an interception. Current record indicates establishment on Hawaii Island. Determined by J.W. Beardsley. (Beardsley).

Fruits and Nuts - Adults of a SWALLOWTAIL BUTTERFLY (Papilio xuthus) observed increasing in infested areas on Oahu; as many as 15 larvae (various instars) on 3-foot-tall citrus plant at Foster Village; damage light. (Kahale). COCONUT SCALE (Aspidiotus destructor) moderate in small planting of bananas at Pearl City, Oahu; about 20 percent of leaves infested. Light to moderate on 50+ coconut trees at Hawaii Kai, Oahu. Telsimia nitida and Lindorus lophanthae (lady beetles) generally light amid scale colonies; heavy on some leaflets with as many as 12 adults and 34 nymphs (T. nitida) per leaflet. (Au, Kashiwai).

Forest and Shade Trees - A CONIFER APHID (Cinara carolina) generally light in 200+ acres of Pinus sp. at Polipoli, Maui. Nymphs and adults ranged up to 100 (averages ranged 1-6) per inch of stem on 3 to 8-foot tall saplings. (Hobdy, Miyahira). All stages of BARNACLE SCALE (Ceroplastes cirripediformis) moderate to heavy on 2 of 12 trees at Hawaii Kai, Oahu. As many as 100+ scales per 2 inches of pencil-sized stems on heavily infested branches. (Kashiwai).

General Pests - Adults of a NARROW WINGED KATYDID (Elimaea punctifera) heavy in commercial plantings of anthurium and citrus at Pahoa, Hawaii. Feeding and oviposition damage to anthurium blossoms heavy in some nurseries; as many as 60 percent of flowers harvested from unsprayed plantings were unmarketable. (Higaki et al.).

Man and Animals - Trapped 289 VEXANS MOSQUITO (Aedes vexans nocturnus) and 3,809 SOUTHERN HOUSE MOSQUITO (Culex pipiens quinquefasciatus) in 53 light traps during July on Oahu. Aedes catches per trap ranged 0-170 at Kahaluu. Culex catches per trap ranged 0-1,583 at Honouliuli. (Mosq. Cont. Br., Dept. of Health).

Beneficial Insects - Adults of a CRYPTOCHETID FLY (Cryptochetum iceryae) emerged from Icerya purchasi (cottonycushion scale) infesting Erythrina trees at Eleele, Kauai, for a new island record. Previously reported from islands of Oahu and Hawaii. (Sugawa).

DETECTION

New Western Hemisphere Records - In HAWAII, a REDUVIID BUG (Haematoecha rubescens (Distant)) Oahu Island, an OEDEMERID (Ananca kanack (Fairmarie)) Hawaii Island. (p. 594).

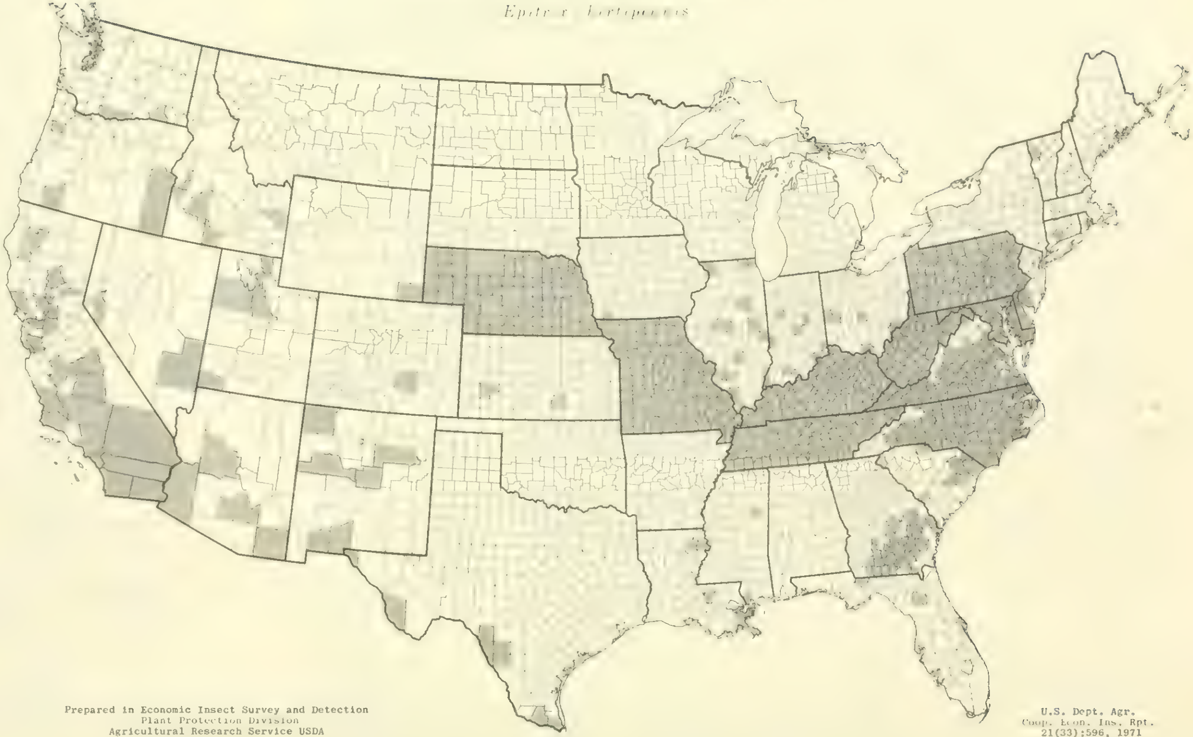
New County and Island Records - A CRYPTOCHETID FLY (Cryptochetum iceryae) HAWAII - Kauai (p. 594). GREENBUG (Schizaphis graminum) IOWA - Osceola (p. 582). IMPORTED FIRE ANT (Solenopsis saevissima richteri) FLORIDA - Lee (p. 593). JAPANESE BEETLE (Popillia japonica) KENTUCKY - Clark (p. 593). PEA LEAF WEEVIL (Sitona lineata) WASHINGTON - Adams, Walla Walla (p. 585). OLDHOUSE BORER (Hylotrupes bajulus) TENNESSEE - Sevier (p. 591).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 7/30-8/5			BL		3			2		37						20			3	3		10		
IOWA																								
Kanawha 7/28-8/2			BL	13			5										249	13	12					
Napier 7/24-8/3			BL	10			22										1276	9	13					
KANSAS																								
Great Bend 7/28-8/4			BL	10			74			33							34		48		2	1		
Tribune 7/29-8/3			BL	1			11			1							3		3					
MINNESOTA																								
Crookston 7/27-8/2			BL														1		2					
Worthington 7/27-8/2			BL																3					
MISSISSIPPI																								
Stoneville 7/30-8/5	60-80	0.49	2BL	1	1			3	1	182						1		6	14		4	42	3	
MISSOURI (County)																								
Platte 7/29-8/4			BL	5													6		3			23		
NEBRASKA																								
Aurora 7/29			BL	132			69			3							748	219	183		29	23		
North Platte 8/5			BL	21			6										14	5	25					
NEW HAMPSHIRE																								
Lee 8/2			BL	5										7					13		1			
NEW JERSEY																								
Plainsboro 7/28-8/3			BL							2							66	22	166		7	19		
Seabrook 7/28-8/3			BL							1							24	11	134		1	58		
NORTH DAKOTA																								
Bottineau 7/27-28			BL	1								1		7					3				1	
Fargo 7/30, 31, 8/1			BL																13					
OHIO																								
Wooster 7/31-8/6			BL	33			4								1		59	21	138		1			
TENNESSEE																								
Cumberland 8/2-6			2BL	4	2					2						10		1	76			46	1	
Fentress 8/2-6			2BL	4	1					5						14		1	90			10		
TEXAS																								
Waco 7/29-8/5	68-80	1.45	BL	22						577									83	82	76	30	320	
WISCONSIN																								
Cedar Grove 7/27-8/2			BL	7													11	15	15					
DeForest 7/27-8/2			BL	1													2	6	16					

Distribution of Tobacco Flea Beetle

Epitrix hirtipennis



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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Plant Protection Division, ARS, USDA
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Hyattsville, Maryland 20782

Volume 21 August 20, 1971 Number 34

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID heavy on corn in Montana and Wyoming. GREENBUG economic on sorghum in Kansas. (p. 599).

EUROPEAN CORN BORER second generation heavier than expected in Michigan. Blacklight trap collections heavy in Iowa. (pp. 600, 608).

WESTERN BEAN CUTWORM moth collections heavy in South Dakota. NORTHERN CORN ROOTWORM adults increasing in New Jersey and Maryland. WESTERN CORN ROOTWORM adults damaged corn in South Dakota. BANKS GRASS MITE heavy on corn in Oklahoma. (p. 601).

COTTON LEAF PERFORATOR increased on cotton in California. Problem on treated cotton in Arizona. LYGUS BUGS troublesome on cotton in Arizona. (p. 603).

SUNFLOWER MOTH, SUNFLOWER MAGGOT, and a GALL MIDGE damaged sunflowers in North Dakota. (p. 604).

Total of 813,654 acres treated for GRASSHOPPER in California, Nevada, Washington, Wyoming, and Idaho. (p. 606).

GYPSY MOTH defoliation ranged 60-100 percent in eastern Pennsylvania. (p. 606).

Detection

For new county and parish records see page 608.

Special Reports

Distribution of Tuber Flea Beetle. Map. (p. 610).

Reports in this issue are for week ending August 13 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 16

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Summer heat continued in the Far West. The Central and East averaged cooler than normal. Strong winds and damaging hail occurred in several North Central States. Heavy rains caused flash floods in parts of Texas.

PRECIPITATION: Thunderstorms accompanied by strong winds occurred in the northern Great Plains late Monday afternoon. At Jamestown, North Dakota, the winds gusted to 86 m.p.h. Hail and 56 m.p.h. gusts occurred at Fargo, North Dakota. Severe weather moved to Wisconsin and Michigan Tuesday. A thunderstorm at Oshkosh, Wisconsin, produced winds gusting to 95 m.p.h. and at La Crosse winds, gusted to 71 m.p.h. and hail 0.75 inch in diameter fell. Strong winds and hail occurred in several States, Iowa, Illinois, Michigan, and Ohio, late afternoon and early Tuesday evening. Strong winds damaged trees and power lines. At Camp Grayling, Michigan, a storm flattened 150 tents causing numerous personal injuries. Showers Tuesday and Tuesday night covered much of the Corn Belt from eastern Iowa to western Pennsylvania. Wednesday's rains covered most of the States from New England to Texas. Heaviest showers occurred in Texas where up to 8 inches fell in Hondo and Seco Creek watersheds west of San Antonio and up to 5.25 inches fell in the upper Guadalupe Basin northwest of San Antonio. Widespread flooding occurred Thursday in parts of Alaska. Palmer, Alaska, was isolated by high water, and roads and highways between Anchorage and Fairbanks became closed by floods or washouts. Weekend rains were the heaviest in northern Texas, where amounts ranged from light sprinkles to over 6 inches. Light showers also fell in the southern Rockies from Nebraska and Missouri, to Great Lakes and over the Florida Peninsula.

TEMPERATURE: Hot sunny weather prevailed over most of the Nation early in the week. Temperatures climbed to 100+° at many western stations. Death Valley, California, warmed to 121° Monday afternoon. Red Bluff, California, recorded 118° Tuesday afternoon. This is highest temperature of record for Red Bluff. Hartford, Connecticut, registered 95° Monday. Northern Minnesota was one of the cooler places. Highest temperature at International Falls, Minnesota, Tuesday

For continuation of weather of the week and for 30-day forecast, see page 607.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - MICHIGAN - Small colony of fourth instar larvae feeding on quackgrass in cornfield in Oceana County. Some feeding on lower corn leaves. Many larvae parasitized and no controls needed. (Stebbins, Cress). NEBRASKA - Scattered heavy infestations in corn in Phelps, Gosper, and Hall Counties. One 20-acre field in Philps County completely destroyed. (Cooksley, Miller). OKLAHOMA - Larvae damaged corn in Cimarron County. Controls planned. (Okla. Coop. Sur.).

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Surveys of sugar beet and beans from Patterson south to Gustine, Stanislaus County, showed curly top damage ranging from 5 to a high of 30 percent. Susceptible crops in Woodland, Davis, and Natomas areas of Sacramento Valley show very little damage. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - DELAWARE - Moths averaged 2-3 per night per light trap in Sussex County. (Burbutis, Lesiewicz). MARYLAND - Moths averaged 17 per night in blacklight trap at Hurlock, Dorchester County. Infestations increasing on corn ears in all areas. (U. Md., Ent. Dept.). TENNESSEE - Larvae damaged whorls of late corn and ears of corn in milk and dough stages. Damage light to heavy depending on location. Controls difficult due to rain and muddy fields. (Gordon). FLORIDA - Adults numerous among flowers and foliage of soybeans in fields west of Gainesville, Alachua County. (Whitcomb). OKLAHOMA - Moderate on sorghum in Kay and Kingfisher Counties and in peanuts in Atoka County. (Okla. Coop. Sur.). NEW MEXICO - Larvae 0-2 per ear in corn checked in Chaves County. (Mathews). ARIZONA - Larvae averaged 2 per ear of corn at Kirkland Junction, Yavapai County. (Ariz. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - MONTANA - Heavy on corn in Glendive area of Dawson County; populations lighter in areas of Sidney, Richland County and Miles City, Custer County. (Pratt). WYOMING - Heavy on irrigated corn near Lusk, Niobrara County. (Parshall). NEW MEXICO - Scattered light to heavy populations on whorls of grain sorghum and corn in Chaves County. (Mathews). OKLAHOMA - Moderate on younger sorghum in Kay, Garfield, and Blaine Counties. (Okla. Coop. Sur.). WISCONSIN - Very numerous in most fields but decrease evident in southern counties. Unspecified species of lady beetle larvae and adults continue numerous, and lacewing adults and larvae increasing in cornfields with heavy aphid populations; syrphid fly larvae numerous in some fields. (Wis. Ins. Sur.). MARYLAND - Population levels light on corn in Frederick and Montgomery Counties. (U. Md., Ent. Dept.).

GREENBUG (Schizaphis graminum) - WISCONSIN - Counts of 20 per 50 sweeps in late sorghum in Rock County. (Wis. Ins. Sur.). KANSAS - Economic on sorghum in Thomas County; averaged 2,500 per plant in one field. Undetermined parasitic wasp activity heavy in some fields as far south as Stevens County and abundant throughout northwest district. Parasitic wasps may give sufficient control of greenbug on sorghum throughout western districts soon. Greenbug parasitism 80-100 percent in some northwest district fields. (Bell). OKLAHOMA - Light to moderate in Texas and Cimarron Counties; numbers continue to decline. Few fields sprayed. (Okla. Coop. Sur.). TEXAS - Populations declining in many fields in High Plains. Beneficial insects very active in untreated fields with high rate of parasitism. Very light greenbug populations in Hockley, Cochran, Bailey, Parmer, Deaf Smith, Randall, Swisher, Hale, and Lubbock Counties. Averaged 5-12 per plant in untreated fields in these counties. Light, averaged less than 4 small colonies per leaf in most fields in El Paso, Pecos, and Reeves Counties. Light, less than 50 aphids per plant in Martin and Midland Counties. (Rummel et al.). NEW MEXICO - Scattered light to moderate infestations on sorghum foliage in Roswell area, Chaves County and Mesilla Valley, Dona Ana County. (Mathews, Clayshulte). COLORADO - Light to heavy in Baca and Kiowa Counties; controls applied. (Hogan).

HORNWORMS (Manduca spp.) - DELAWARE - Adults averaged 5 per night in blacklight trap at Bridgeville, Sussex County. Averaged 2 eggs per plant in pepper plots in area. (Burbutis, Lesiewicz). TENNESSEE - M. sexta (tobacco hornworm) and M.

quinquemaculata (tomato hornworm) continue to cause moderate damage in most areas. Controls delayed due to continuous rain. (Gordon).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - No noticeable increase of nymphs and adults in alfalfa, some individual fields contain heavy numbers. Counts more constant in soybeans, average of about 1 per sweep in southern counties. (Wis. Ins. Sur.). MARYLAND - Moderate to heavy (5-47 per sweep) on alfalfa in southern Frederick County. (U. Md., Ent. Dept.).

TOMATO HORNWORM (Manduca quinquemaculata) - NEW MEXICO - Variable in home gardens and commercial tomato fields in Bernalillo County. Light to extensive foliage damage. (Heninger). MARYLAND - Below economic levels in most tobacco. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - KANSAS - Most second-generation larvae on corn surveyed in Brown and Doniphan Counties in first to third instars and had not bored into stalks. Most eggs hatched. Larvae primarily feeding on leaves near collar and behind leaf sheaths. In 4 Brown County fields, 30-60 percent of plants infested and larvae averaged 0.2-2.1 per plant. Larvae up to 5 per plant in Leavenworth and Anderson Counties. (Bell). NEBRASKA - Averaged 284 tunnels, 70 larvae, 90 pupae, and 7 egg masses per 100 corn plants on August 9 in 10 Dixon County fields. Adults numerous in roadside ditches and grassy field margins. Adult emergence estimated at about 15 percent complete on August 9. (Berogan). Light second brood activity in 6 fields examined in Sarpy County August 11. Averaged about 1 egg mass per 25 plants. Based on present moth emergence, estimate most optimum times for control of second-brood borers as August 11-17, August 13-20, and August 16-23 in southeast, east, and northeast districts respectively. (Keith). IOWA - Second-brood moth flight peaked at Ames, Story County, on August 7 and at Kanawha, Handcock County, (60 miles north) on August 8. (Iowa Ins. Sur.). SOUTH DAKOTA - Larvae damaged corn in eastern Custer County. Less than 0.5 percent of stalks damaged. This is a new county record. (Jones, Rieckman). WISCONSIN - Moth flights increased. Heaviest flights occurred on nights of August 7-9. Egg masses ranged 1-10 per 25 sweet corn plants in Dane and Columbia Counties, treatment planned. Egg hatch expected by August 13 or 14. Few first instar larvae of second generation apparent in silks of early corn near Spring Green in Sauk County. (Wis. Ins. Sur.).

ILLINOIS - Emergence of second-brood O. nubilalis moths near 90+ percent in northern section. Based on first-generation, expect heavy second generation in south-central and western areas. Observations indicate egg laying will be spread over next 2 or 3 weeks in central and northern areas. Egg masses and newly hatched borers still light in southern areas. (Sur. Bul.). MICHIGAN - Collected 684 moths at Monroe blacklight station, August 3 and 370 on August 4. Second brood much heavier than anticipated. (Newman). OHIO - Moth flights heavy. On August 9, collected 92 moths from blacklight trap at Wooster, Wayne County. (Rings). MAINE - Infestations remain very light and sporadic in central area corn. (Gall). NEW JERSEY - Second-generation populations increasing throughout State. (Ins.-Dis. Newsltr.). DELAWARE - Moths averaged 22 per night in light trap at Bridgeville, Sussex County. Infestation of untreated peppers localized, ranged 0-21 percent. (Burbutis, Lesiewicz). MARYLAND - Moths averaged 14 per night in blacklight trap at Hurlock, Dorchester County. Several heavy second-generation infestations on corn in Frederick County. (U. Md., Ent. Dept.). SOUTH CAROLINA - Damaged large acreage of corn at dairy in Richland County. Infestation averaged 30 percent. (Nettles). MISSISSIPPI - Infestation moderate in Marshall County. Second-generation larvae present but some pupating. (Robinson).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Infestations light to heavy and scattered throughout most South Plains counties. Larvae averaged 4 per 10 plants in Lubbock, Hockley, Cochran, and Bailey Counties. Counts lighter in Parmer, Deaf Smith, Randall, and Hale Counties. Continues to damage grain sorghum by feeding in whorls in Knox, Baylor, and Fisher Counties. Moderate on sorghum in

Bakersfield area of Pecos County; larval counts of 1-2 per whorl. (Green et al.). OKLAHOMA - Heavy on sorghum in Oklahoma and Wagoner Counties and moderate in Kingfisher, Grady, Garfield, and Okmulgee Counties. (Okla. Coop. Sur.). ILLINOIS - Continues to feed on late-maturing corn and grain sorghum, particularly in southern half of State. (Sur. Bul.). MARYLAND - Infestations ranged 8-36 percent in Frederick County. (U. Md., Ent. Dept.). TENNESSEE - Moderate to heavy damage to some late-planted corn in middle and western areas. Feeding in whorls. Control difficult due to rain and muddy fields. (Gordon).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - SOUTH DAKOTA - Moth collections increased in blacklight trap near Oral, Fall River County, compared to 1970. From July 17 to 23, moth averaged 78 per night. Increase of 10-fold over nightly collections at same time in 1970. During early July, moth collections built up from 5 per night to 13 per night. (Calkins). KANSAS - Larvae light in one cornfield by county: Sheridan, Cheyenne, Wallace, and Greeley. Infestation in Sheridan County is a new county record. Determined by M. Shuman. (Bell).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Moderate on sorghum in Okmulgee County. (Okla. Coop. Sur.). MISSISSIPPI - Larvae ranged 25-30 per head in grain sorghum for silage in Noxubee County. (Robinson).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW JERSEY - Adults increasing on field corn and other hosts throughout central and western parts of State. (Ins.-Dis. Newsltr.). MARYLAND - Adults increasing on corn silks in Frederick and Kent Counties. (U. Md., Ent. Dept.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Adults damaged silks on late-planted corn in eastern Custer County. Adults 5-7 per plant on corn following corn and on first-year corn, adults 1-2 per plant. Populations similar in eastern Fall River on Angostora Irrigation Project. Some controls to be applied. (Jones, Rieckman). In northern Moody County, adults 8-10 per plant in some fields. (Fransen, Lathrip). ILLINOIS - Specimens recovered from corn in Christian County, by W.R. Harryman, July 23 and in Menard County, by E. Rankin, July 28, 1971. These are new county records. (Ill. Ins. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - Continues to increase; most emerged in southern counties. Individual fields with 10 adults per ear noted in Rock County. D. virgifera (western corn rootworm) dominant in southwestern areas. (Wis. Ins. Sur.). KANSAS - Adult averages per plant in corn surveyed in counties indicated (fields per county in parentheses): Doniphan 1.2-4.7 (5); Brown 0.2-2.1 (5); Wyandotte 2 (1); Leavenworth 1-5 (3); Linn 3-11 (2); Franklin 2-4 (4); Anderson 8-10 (2); Wilson 0.1 (1); Montgomery 0-0.1 (2); Greeley 0-1 (2); Wallace 1 (1); Thomas 0.5-0.8 (2); Sheridan 1 (1); Graham 1 (1); Decatur 2 (1); and Rawlins 3.3 (1). (Bell).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - SOUTH CAROLINA - This species and unspecified wireworms destroyed 50 acres of grain sorghum in Horry County; fields replanted in grain sorghum, damage again appearing. (Witherspoon).

SORGHUM MIDGE (Contarinia sorghicola) - MISSOURI - Adults 3-4 per head on small acreage of grain sorghum in bloom in Pemiscot County. (Craig). MISSISSIPPI - Light in Clay County. Averaged 2 adults per row foot in 2 fields of grain sorghum in Jefferson County; 10 per row foot in field of sorghum for silage in Noxubee County, with adult emergence noted from several heads in this field. (Robinson).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Very light observed in High Plains and Trans-Pecos area. Very light in Swisher and other Panhandle counties. (Neeb et al.). OKLAHOMA - Heavy and still increasing on corn in Texas County. Lower 2 leaves show considerable damage in some fields. (Okla. Coop. Sur.). COLORADO - Present in many cornfields statewide but local rains keeping numbers low in many areas. (Hantsbarger).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (*Spodoptera frugiperda*) - SOUTH CAROLINA - Serious infestation found in Jasper County in same fields as in 1970. (Tate).

GRASSHOPPERS - KENTUCKY - Adults and nymphs averaged 680 per 100 sweeps in clover hayfields in Carter County and 960 in Lawrence County. (Barnett).

FORAGE LEGUMES

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Averages per 100 sweeps of alfalfa at following: 70, Gila Valley, Yuma County; 35, Yuma Mesa, Yuma County. 20, Chino Valley, Yavapai County. 60, Safford, Graham County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - NEVADA - *L. hesperus* adults ranged 9-16 and nymphs 9-35 per sweep in treated seed alfalfa in Dixie Valley, Churchill County; 3 separate chemicals applied to different fields, but results negligible. (Stitt). Averaged 2 adults and 1 nymph per sweep on seed alfalfa at Kings River Valley, Humboldt County. (Martinelli).

DESERT CORN FLEA BEETLE (*Chaetocnema ectypa*) - ARIZONA - Averaging 200 per 100 sweeps of Sudan grass at Yuma, Yuma County. (Ariz. Coop. Sur.).

GRASSHOPPERS (*Melanoplus* spp.) - MISSOURI - Mixed populations of *M. femurrubrum* and *M. differentialis* in few fields of red clover in Ste. Genevieve County; ranged 15-20 per square yard in field margins and 12-15 per square yard in other areas of field. (Craig).

SOYBEANS

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Caused some defoliation but below economic levels on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Larvae per 30 row feet by county: Dinwiddie 117.0; Sussex 37.5; Southampton 72.0; Greenville 75.0. Most larvae first or second instar. Young larvae detected for some time; apparently early stage mortality heavy. (Allen). KANSAS - Larvae averaged 3 per 30 row feet in Greenwood County field and 7 in Wilson County field. (Bell).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - FLORIDA - Larvae light (1 per row foot) in soybean field at Brooksville, Hernando County; medium (4+ per foot) in Dade and Pasco Counties. (Whitcomb).

BEET ARMYWORM (*Spodoptera exigua*) - SOUTH CAROLINA - Small larvae reported from Summerville, Dorchester County. Problem in area for several years. (Lseman).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - MARYLAND - Foliage injury ranged 10-20 percent in several areas of Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In McLennan and Falls Counties, punctured squares averaged 16.2 (maximum 45) percent; averaged 19.7 (maximum 54.7) percent in 26 untreated fields. (Cowan et al.). OKLAHOMA - Ranged 10-25 percent in cotton in Marshall County. Moderate in Bryan County and light to moderate in Cleveland County. (Okla. Coop. Sur.). ARKANSAS - Of 7,296 fields surveyed; 5,677 infested and 1,651 need controls. (Boyer et al.). LOUISIANA - In Madison Parish for period ending August 5, recovered 2 weevils from 20 non-sticky traps and none from 4 sticky traps; total to date 2,643. Punctured squares in all fields checked. This period no weevils taken on traps. Punctured squares ranged 7-52 (averaged 25.7) percent in 91 plots. Collected 35 *H. zea* in blacklight trap. (Cleveland et al.). Punctured square counts continue to increase. Some growers delayed controls too long, some fields show 75 percent punctured squares. (Tynes et al., Aug. 9). MISSISSIPPI - Adult infestations in southern eradication and buffer area remain heavy. Populations should soon decline as controls underway. Infestations ranged 24-87 percent in 9 eradication and buffer counties. In delta area, weevils becoming more prevalent. Heavier in some fields near woods. (Robinson). In delta counties, punctured squares in 15 of 18 fields checked. Average of 7.33 percent punctured with maximum of 53 percent. (Pfrimmer et al.). TENNESSEE - Conditions ideal for further increases. Damage increasing in regularly infested areas, most fields at or above control levels. Control applications difficult due to weather. (Gordon). GEORGIA - Punctured squares during period ending August 7 ranged 3-28 percent in Randolph County (Womack); ranged less than 5 percent where good control practices followed in Crisp, Worth, and Brooks Counties (Hudspeth); and ranged up to 80 percent where controls interrupted or stopped (Womack). SOUTH CAROLINA - In Florence County for period ending August 4, populations increasing, no evidence of migration. This period still increasing and migration underway. (Taft et al.).

BOLLWORMS (*Heliothis* spp.) - ARIZONA - Treated field at Yuma Valley, Yuma County. Fifty percent of cotton at Avra Valley treated for *H. zea* and *Lygus* spp. in Pima County. (Ariz. Coop. Sur.). NEW MEXICO - Averaging about one larva per 50 feet of row in Chaves County fields checked. (Mathews). Scattered infestations in Dona Ana County, no definite second-generation cycle noted. (N.M. Coop. Rpt.). OKLAHOMA - Moderate on cotton in Bryan County. (Okla. Coop. Sur.). TEXAS - In McLennan and Falls Counties, eggs averaged 6.4 (maximum 8.5) and larvae 10.2 (maximum 16.1) per 100 terminals in 6 treated fields. Eggs averaged 4.4 (maximum 17.7) and larvae 5.2 (maximum 19) in 26 untreated fields. Of 505 larvae collected from cotton, 116 or 23 percent identified *H. virescens*. (Cowan et al.). LOUISIANA - In Madison Parish for period ending August 5, damaged squares in 88 of 91 plots; infestations ranged 1-16 (averaged 3.1) percent. Total of 16 eggs collected and identified; 15 were *Heliothis* spp. and 1 *Trichoplusia ni* (cabbage looper). Collected 73 *H. zea* and 4 *H. virescens* in blacklight trap. Currently damaged squares in 90 of 91 plots examined; infestations ranged 1-9 (averaged 3.9) percent. (Cleveland et al.). ARKANSAS - Of 7,296 fields surveyed; 5,926 infested and 2,303 need controls. (Boyer et al.).

TENNESSEE - Major increase in number of *H. zea* adults in blacklight traps noted in western area. Number of fields above control level also increased. Boll injury increasing. Weather conditions prevented control applications in most areas. (Gordon). MISSISSIPPI - Survey of late larvae in Leflore County indicates populations in some fields average 30 percent *H. virescens*. This indicates these large larvae escaped treatment instead of being resistant. Infestations ranged 2-7 percent in 214 fields checked in 6 counties. (Robinson). In delta counties, moth catch continues low. Eggs and larvae very scarce. Injured squares found in 16 of 18 fields checked. Average of 6.8 percent injured with a maximum of 11.5 percent. (Pfrimmer et al.). GEORGIA - Small larvae ranged 0-20 and eggs 0-40 per 100 terminals throughout southern areas during period ending August 7 (Womack); populations building up in Walker County (Benton). SOUTH CAROLINA - In Florence County for period ending August 4, moth collections in light traps totalled 275 *H. zea* and 4 *H. virescens*. Generally light populations. Currently increasing. Light traps totalled 305 *H. zea* and 2 *H. virescens*. (Taft et al.).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - CALIFORNIA - Increased in Imperial Valley, Imperial County. Some local heavy populations preceeded current increase. (Cal. Coop. Rpt.). ARIZONA - Problem in treated fields; additional insecticide added for this pest in Yuma Valley, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Buildup at Yuma Valley and Parker Valley despite regular treatments. Additional insecticide mixed with regular material or special treatment applied in many cases in Yuma County. (Ariz. Coop. Sur.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - KENTUCKY - Adults damaged tobacco in Carter and Morgan Counties. Averaged 3-4 per leaf in Morgan County. (Barnett). VIRGINIA - Adults, 1-2 per leaf, causing 5-20 holes per leaf in 3 fields totalling 11 acres in Dinwiddie County.(Allen).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - NORTH DAKOTA - Economic in 6 percent of fields surveyed in Richland, Cass, and Traill Counties. Larval infestations ranged up to 670 per 100 heads. (Brandvik).

SUNFLOWER MAGGOT (Strauzia longipennis) - NORTH DAKOTA - Infestations in most sunflower fields in Cass, Traill, and Grand Forks Counties. Up to 100 percent of stems infested in some fields. (Brandvik, Kaatz).

A GALL MIDGE (Contarinia sp.) - NORTH DAKOTA - Infestations and damage noted on sunflowers in east-central counties. Heaviest infestations and damage in Traill County. Ranged up to 100 percent of heads infested. Damage more evident along edges of fields. First specimens collected July 23, 1971, in Traill County by J.T. Schulz. Larvae determined to genus Contarinia by R.J. Gagne. (Brandvik, Kaatz).

POTATOES, TOMATOES, PEPPERS

CABBAGE LOOPER (Trichoplusia ni) - TENNESSEE - Larvae damaged tomatoes in Cocke County. Infestations widespread, defoliation occurring. Most larvae full grown, some diseased immatures observed. (Williams).

TOMATO PINWORM (Keiferia lycopersicella) - MISSISSIPPI - Infestations declining in field tomatoes near Crystal Springs, Copiah County, due to intensive insecticide program. Continues to damage greenhouse tomatoes in Copiah and Hinds Counties. (Robinson).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Alatae infesting 40 acres of potatoes near Quincy, Grant County; averaged 8 per sweep. Adults of Chrysopa sp. (a green lacewing) unusually abundant, 3-4 per sweep. (Landis).

BEANS AND PEAS

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - OHIO - Up to 50 percent loss reported on commercial snapbeans in Lucas County. (Miller).

MEXICAN BEAN BEETLE (Epilachna varivestis) - TENNESSEE - Damage moderate to heavy in middle and western areas. Rains delayed controls. (Gordon).

GENERAL VEGETABLES

ONION THRIPS (Thrips tabaci) - NEVADA - Heavy on onions, treatment required in Mason Valley, Lyon County. (Adams).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - MICHIGAN - Fresh entry "stings" in calyx end of fruit and first to third instar in some southwest area orchards. (Thompson). WASHINGTON - Second-generation larvae entering apples at Pullman, Whitman County, August 6. (Telford).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Buildup in most western areas. Flies per trap increased from 6 to 217 in Lane County and from 3 to 39 in Multnomah County. (Larson). Uniform emergence throughout Douglas County orchards with peaks in most areas August 1. Controls applied. (Passon).

SMALL FRUITS

EUROPEAN RED MITE (Panonychus ulmi)- PENNSYLVANIA - Averaged 120 eggs, and 14 immatures and adults per grape leaf. Damage less than 1 percent; no bronzed foliage in this untreated vineyard on this date. Absent in nearby treated vineyard. (Jubb, Aug. 10).

ORNAMENTALS

A LACE BUG (Stephanitis takeyai) - PENNSYLVANIA - Adults collected on Pieris plants in nursery at Stroudsburg, Monroe County, by A. Wheeler July 29. Adults 0-2 per leaf of P. japonica, damage 25-50 percent in nurseries at Lancaster and Gap, Lancaster County. Damaged some deciduous azaleas at Gap August 5. All determined by E. Simons. These are new county records. (Kim).

FOREST AND SHADE TREES

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - ARKANSAS - Very heavy on red oak in Clark County; first year of infestations in this area. Heavy infestations in Pulaski County. (Boyer).

SADDLED PROMINENT (Heterocampa guttivitta) - NEW HAMPSHIRE - Larvae stripping trees in Cheshire County and around fringe areas stripped in 1970 in Carroll and Grafton Counties. Biological control effective. Bacterial wilt caused collapse of infestation in some areas of Carroll County. (Blickle).

A BUPRESTID BEETLE (Chrysobothris floricola) - FLORIDA - Killed 5-10 percent of two-year-old slash pine plantings in Glades and Hamilton Counties. Adults currently emerging; damaged young trees previously weakened by drought. (Wilkinson).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Light to severe damage to almost every leaf on majority of elms at Alameda and Albuquerque, Bernalillo County, and at Corrales, Sandoval County. (Heninger). Skeletonized leaves on occasional Siberian elm at Silver City and minor damage at Cliff and Buckhorn, Grant County. Completely skeletonized majority of trees at Riverside. (Hare). COLORADO - Severe elm defoliation continues in most metropolitan areas. (Hantsbarger). NEVADA - Adult flight unusually heavy in southern Washoe County; many entered homes, restaurants, and other buildings. (Nev. Coop. Rpt.).

DUSKY BIRCH SAWFLY (Croesus latitarsus) - TENNESSEE - Damage heavy to birch in Knox County. (Mullett).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 3 cases reported in U.S. August 8-14 as follows: TEXAS - Kinney 1; ARKANSAS - Little River 2. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - WYOMING - Increasing on Albany County cattle. (Pennington). TEXAS - Moderate to heavy (200 to 1,000 per head) on cattle in Midland, Martin, Reagan, and Pecos Counties. (Green). OKLAHOMA - Heavy on untreated cattle in Marshall County. Moderate in Cleveland and Cimarron Counties. (Okla. Coop. Sur.). FLORIDA - Adults averaged 94 per dairy animal near Gainesville, Alachua County. (McIlveen). OHIO - Adults averaged 35 per animal on beef cattle in Wayne County. (Molineros). Average 193 on backs of beef cattle in Noble County. (Pratt).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Remains prevalent on cattle in Monroe County. (Robinson). OHIO - Adults averaged per head on cattle: 8.6 on beef in Wayne County and 18.5 on dairy (Molineros), and 49 on beef in Noble County. (Pratt). MARYLAND - Averaged 30 per head on 80 Holstein cows at Knoxville, Frederick County. (U. Md., Ent. Dept.)

STABLE FLY (Stomoxys calcitrans) - MARYLAND - Averaged 50 per head on 80 Holstein cows at Knoxville, Frederick County. (U. Md., Ent. Dept.). WISCONSIN - Heavy in Calumet, Walworth, Adams, and Richland Counties. (Wis. Ins. Sur.).

TABANID FLIES - TENNESSEE - Horse flies continue heavy across State. Controls ineffective in most instances. (Gordon).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - Total acres treated as of August 16 as follows: CALIFORNIA 24,192, NEVADA 11,400, WASHINGTON 3,480, and WYOMING 12,960. (PPD). OREGON - Primarily Melanoplus sanguinipes infested estimated 1 million acres of rangeland in eastern areas. (Goeden). IDAHO - Control program completed. A total of 761,622 acres treated this season. (PPD). SOUTH DAKOTA - Camnula pellucida damaging fields in Custer County (heaviest, 10 miles west of Custer) and in western Pennington County, (heaviest in Deerfield, Rochford area). Ranged 3-100 (averaged 20) per square yard in many places. Damage ranges from light to heavy, mostly to grass in meadows and timothy hay crops. Melanoplus bivittatus and M. differentialis built up in Hughes, Sully, Potter, Walworth, and Campbell Counties. Damage to alfalfa and occasional light damage to borders of fields threatening to be severe in parts of these counties. (Zimmerman). NORTH DAKOTA - Adult survey completed in Sioux, Grant, and Morton Counties showed economic infestations in St. Anthony and Flasher areas in Morton County. Field counts ranged 6-70 per square yard in alfalfa and 4-40 per square yard in field margins. M. femurrubrum and M. differentialis dominant. Light infestations in Leith and Pretty Rock Butte area in Grant County. (Grasser).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Collected 11 adults in trap at East Providence township, Bedford County, by D.J. Marek July 30. Determined by J.M. Murnigham. This is a new county record. (PPD). Percent defoliation ranged 5-60 on 506,400 acres in Schuylkill, Berks, Carbon, Pike, Monroe, Northampton, Luzerne, Bucks, Lehigh, Centre, Lackawanna, Susquehanna, and Wayne Counties, and ranged 60-100 on 92,200 acres in Schuylkill, Berks, Carbon, Pike, Monroe, Northampton, and Luzerne Counties. (Nichols). MARYLAND - Collected 3 adults in trap at Williamsport, Washington County, by C.E. Creek August 16. Determined by E.L. Todd. This is a new county record. VIRGINIA - Collected 1 adult in trap at Gordensville, Orange County, by J.D. Artman August 10. Determined by E.L. Todd. First time trapped in county. (PPD).

MEXICAN FRUIT FLY - (Anastrepha ludens) - CALIFORNIA - A native fly trapped at San Ysidro, August 6, near Mexican border. (PPD).

JAPANESE BEETLE (Popillia japonica) - KENTUCKY - Adults averaged 12 per cherry seedling in nursery in Carter County. Heavily damaged peach trees, roses, and shrubs in Boyd and Floyd Counties. Damaged domestic grapevines in Johnson County. (Barnett). TENNESSEE - Single adult trapped near produce plant in Weakly County August 6. MICHIGAN - Single adult trapped in Allegan, Allegan County. First adult trapped in these counties. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - First native male moth north of Tehachapi Mountains in San Joaquin Valley collected from hexalure trap in 60-acre cotton planting at Earlimart, Tulare County, on August 5 by A. Watkins. Blossom and boll surveys negative. (Cal. Coop. Rpt.). Sterile moths released August 12-18 by county: Tulare 15,000 and Kern 3,203,250. Total for 1971 season to date 55,959,750. (PPD).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Cysts recovered near Grenada, Grenada County, by Mc Cartney on August 2. Determined by V.H. Owens, confirmed by A.M. Golden. This is a new county record. (PPD).

WHITEFRINGED BEETLES (Graphognathus spp.) - LOUISIANA - Adult G. peregrinus collected near Elton, Jefferson Davis Parish, by H. Baque and H. Young on August 6. ARKANSAS - Adult G. peregrinus collected at Lake Village, Chicot County, by W. Burton on August 6. NORTH CAROLINA - Adult G. leucoloma fecundus collected near Franklinton, Franklin County, by J.W. Scott on July 22 and G. leucoloma striatus adult at Swan Quarter, Hyde County, by W.J. Wescott on July 26. Determinations by V.H. Owens, confirmed by R.E. Warner. These are new county and parish records. (PPD).

Weather of the week continued from page 598.

was a comfortable 71°. The weather continued hot over the Far West with many stations in Washington, Oregon, California, Nevada, and Arizona recording temperatures above 100°; Havre, Montana, recorded 100° Wednesday afternoon, and Huron, South Dakota, registered 100° Thursday. Northerly breezes brought cool dry air to much of the Northeast Thursday. Many spots in the Northeast were 10° to 12° cooler Thursday than Wednesday. Maximums at Washington, D.C. were: Wednesday 93°, Thursday 81°. Warmer air returned to the Northeast Friday and Saturday, before another cool day Sunday. Albany, New York, registered 85° Saturday, but no higher than 69° Sunday. High temperatures continued over the West with temperatures exceeding 100° over much of eastern Montana and northern Wyoming Saturday. Weekly mean temperatures averaged above normal northwest of a line from southern California to eastern South Dakota and in New England and below normal over most of the rest of the Nation.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK
MID-AUGUST TO MID-SEPTEMBER 1971

The National Weather Service's 30-day outlook for mid-August to mid-September is for temperatures to average below seasonal normals over the southern half of the Nation east of the Divide. Above normal temperatures are indicated for the Northern Plains and most areas west of the Divide. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal over the middle and south Atlantic Coast States, the Great Basin, the Southern Plains, and portions of the Northern and Central Plains. Subnormal totals are indicated for the far Northwest and the Great Lakes region. In unspecified areas near normal precipitation is expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

HAWAII INSECT REPORT

General Vegetables - PEPPER WEEVIL (*Anthonomus eugenii*) moderate in 0.5 acre of sweet pepper at Wailua, Kauai. (Ikehara). BEAN FLY (*Melanagromyza phaseoli*) negligible in most commercial snap bean plantings at Waimanalo, Oahu; light to moderate in 5,000 square-foot planting of long beans, about 20 percent of leaf petioles infested. On Kauai, infested cowpea and snap bean material collected from various areas revealed 81 percent parasitism of bean fly, mostly by *Opius* spp. (73 percent). On Maui, bean fly activity remains generally light especially at higher elevations (500+ feet). Infested yardlongbeans collected from Puunene, Waikapu, and Waihee, Maui, revealed 63 percent parsitism; 37 percent by *Opius* spp. (braconids). (Sugawa, Miyahira, Kawamura).

Fruits and Nuts - Damage by COCONUT LEAFROLLER (*Hedylepta blackburni*) moderate to about 60 percent of fronds of 40+ coconut trees at Hawaii Kai Golf Course, Oahu; damage reported heavy to coconut seedlings at Waimanalo Beach Park (CEIR 21(21): 365) apparently contributing to demise of few plants. Cocoons of hymenopterous parasites moderate on infested leaflets at both locales. (Kawamura). COCONUT SCALE (*Aspidiotus destructor*) generally trace in most papaya and banana plantings on windward Oahu. In most fields, about 10 percent of leaves of both crops with spotty, sporadic colonies. (Au, Kawamura).

Forest and Shade Trees - Larvae and adults of a BARK BEETLE (*Xylosandrus compactus*) moderate in koa haole (*Leucaena leucocephala*) terminals at Kipapa Gulch, Oahu; 25-50 percent of young plants infested. All stages light to moderate in twigs of *Acacia koa* at Waiakea Forest Reserve, Hawaii. (Laemmlen, Kashiwai).

Miscellaneous Pests - All stages of GIANT AFRICAN SNAIL (*Achatina fulica*) moderate and active at Schofield Barracks, Oahu, following light rainfall in area; snails in aestivation 2 weeks ago. All stages heavy in drainage basin at Wheeler Air Force Base, Oahu; as many as 500 snails observed at base of and on trunk of *Ficus glomerata* tree. ROSY PREDATOR SNAIL (*Euglandina rosea*) and a CARNIVOROUS SNAIL (*Gonaxis quadrilateralis*) trace at both areas. *G. quadrilateralis* released at this locality for first time March 24, 1971. On Kauai, no snail activity observed at Poipu or Wahiawa during routine surveillance; poison bait application temporarily discontinued. (Olson, Sugawa). Sweeping of roadside Koa haole moderately defoliated by a GEOMETRID MOTH (*Semiothisa santaremaria*) and KOA HAOLE LOOPER (*Anacamptodes fragilaria*) revealed light to moderate larval counts of both species; 46 *S. santaremaria*, 27 *A. fragilaria* per 50 sweeps. (Kawamura).

DETECTION

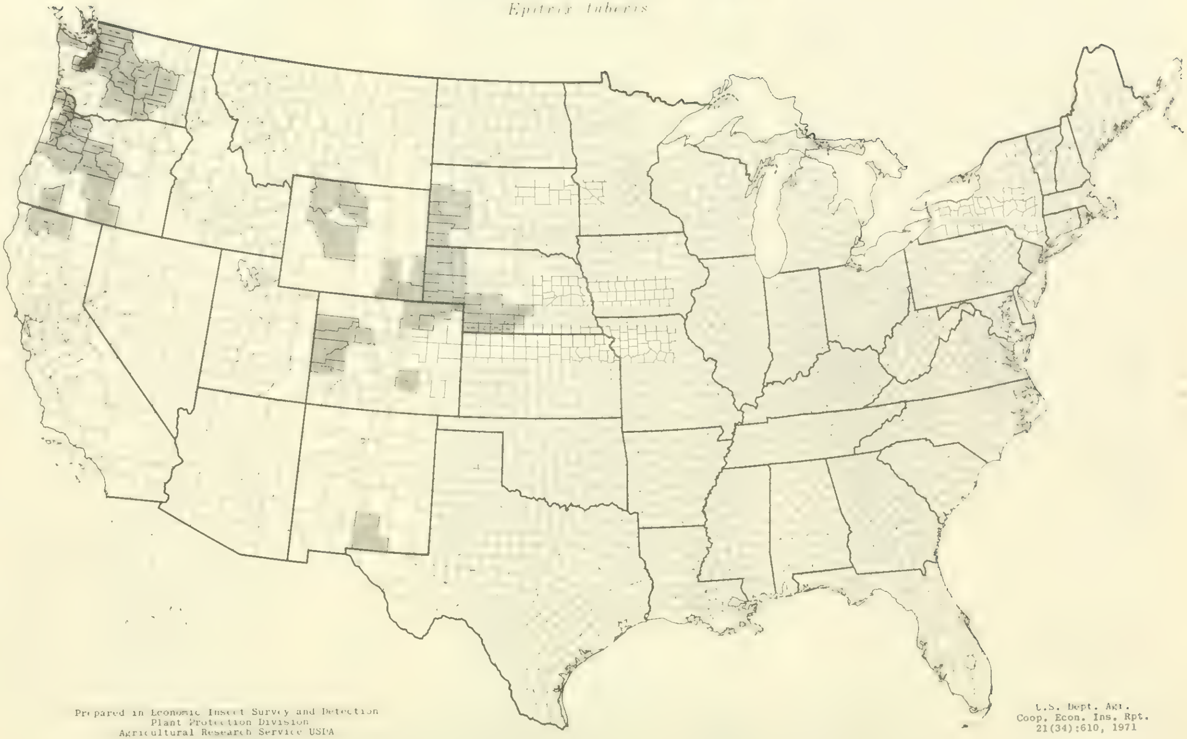
New County and Parish Records - EUROPEAN CORN BORER (*Ostrinia nubilalis*) SOUTH DAKOTA - Custer (p. 600). GYPSY MOTH (*Porthetria dispar*) MARYLAND - Washington; PENNSYLVANIA - Bedford (p. 606). A LACE BUG (*Stephanitis takeyai*) PENNSYLVANIA - Lancaster, Monroe (p. 605). SOYBEAN CYST NEMATODE (*Heterodera glycines*) MISSISSIPPI - Grenada (p. 607). WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) KANSAS - Sheridan (p. 601). WESTERN CORN ROOTWORM (*Diabrotica virgifera*) ILLINOIS - Christian, Menard (p. 601). WHITEFRINGED BEETLES (*Graphognathus* spp.) *G. leucoloma fecundus* in NORTH CAROLINA - Franklin; *G. leucoloma striatus* in NORTH CAROLINA - Hyde; *G. peregrinus* in ARKANSAS - Chicot, LOUISIANA - Jefferson Davis (p. 607).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 8/6-12			BL		3			8	1	34						10			2	2	1	7		
IOWA																								
Kanawha 8/3-11			BL	17			12										6223	19	9					
Napier 8/4-8			BL	9			9										3443	12	3					
MISSISSIPPI																								
Stoneville 8/6-12	68-93	1.35	2BL	1				5		78						1			6		11	43	29	
MISSOURI (County)																								
Pemiscot 8/7-12			BL	21						130							76	3	11		14	16		
Platte 8/5-11			BL	3													2	1	5			21		
NEBRASKA																								
Aurora 8/5			BL	52			26			9							2255	59	76			14		
North Platte 8/12			BL	17			3								1		44	2	24					
NEW HAMPSHIRE																								
Lee 8/9			BL				50							3			2							
NEW JERSEY																								
Plainsboro 8/4-10			BL	13											1		134	10	53		9		56	
Seabrook 8/4-10			BL	32						2					3		56	13	150		5	26	82	
NORTH DAKOTA																								
Bottineau 8/5-6			BL									2		14										
Fargo 8/8, 10, 11			BL									6		4					9					
OHIO																								
Wooster 8/7-12			BL	19			11										173	18	47		1		2	
SOUTH DAKOTA																								
Brookings 8/2-8			BL	13			46										19	47	28					
TENNESSEE																								
Cumberland 8/9-13			BL	7						5					1	13			64			38	1	
Fentress 8/9-13			BL	1	1					5					2	8			22			16	1	
TEXAS																								
Waco 8/6-12	73-89	trace	BL	5	2			16		257								5	32	83	8	10	104	
VIRGINIA																								
Holland 8/3-9			BL	3						20					1	1	161					29		
Montgomery 8/5-10			BL	5						8					4	8	90					19		
WISCONSIN																								
Cedar Grove 8/3-9			BL	5													59	15	10		4			
DeForest 8/3-10			BL														166	9	3					

Distribution of Tuber Flea Beetle

Epitrix tuberis



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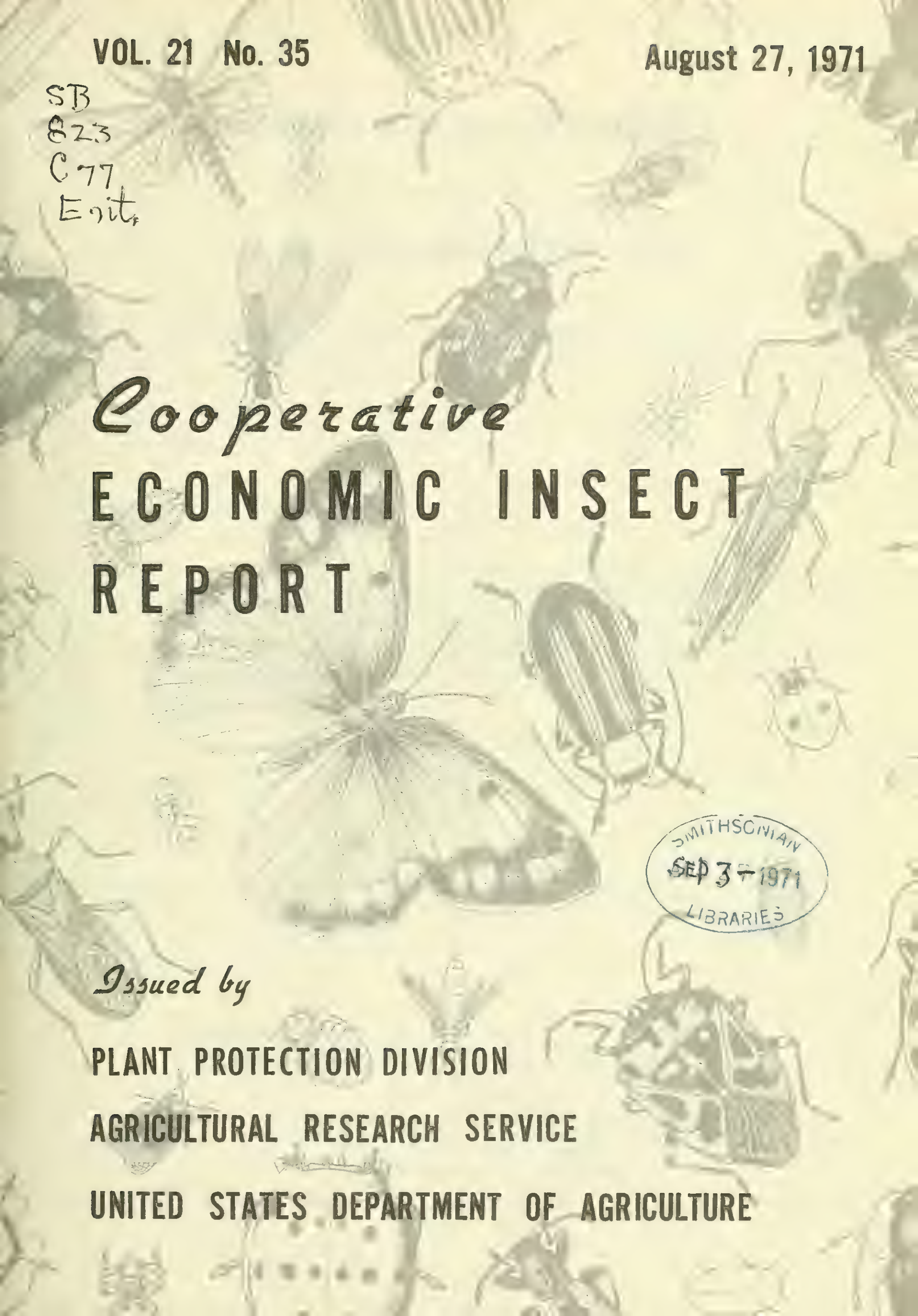

Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Volume 21 August 27, 1971 Number 35

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM larvae heavy on oats and grass in limited area of Colorado. Some larval damage in Nebraska. CORN EARWORM damaged sorghum in Arizona, Texas, and Alabama. (p. 613).

FALL ARMYWORM larvae heavy on rangeland and sorghum in Texas and sorghum in Alabama. (p. 615).

BANKS GRASS MITE heavy in one area of Wyoming and in Oklahoma Panhandle on corn. (p. 616).

GREEN PEACH APHID troublesome on seed potatoes in Oregon. (p. 619).

SPIDER MITE damage moderate to severe in apple and pear orchards in Utah. (p. 621).

GIANT AFRICAN SNAIL found outside regulated area in Dade County, Florida. (p. 624).

Detection

● A LEAFHOPPER reported from Oregon for first time. This is a North American record. Also recorded from Europe. (p. 616).

New State records include a TREEHOPPER from Oregon (p. 616) and an EURYTOMID WASP from Pennsylvania (p. 622).

For new county records see page 620.

Special Reports

Whitefringed Beetle Quarantines. Map. Centerfold.

Reports in this issue are for week ending August 20 unless otherwise indicated.

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Whitefringed Beetle Quarantines. Map. Centerfold.

WEATHER OF THE WEEK ENDING AUGUST 23

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: The Northwest continued warm last week. A warming trend occurred over the north central and northeastern portions. Heavy rains fell along south Atlantic coast early in the week.

PRECIPITATION: Heavy rains fell early in the week, in connection with a tropical depression, which moved along the Carolina coast. Amounts ranged from 4 to over 10 inches of rain. Savannah, Georgia, received 7.04 inches in 24 hours ending Tuesday morning, and over 8 inches fell at Sullivans Island, South Carolina, in the same 24-hour period. The total of Pee Dee, South Carolina, for the 48-hour period ending Tuesday evening was 9.11 inches. In that period, 6.11 inches fell at Columbia, South Carolina. Rains were lighter as remnants of the tropical depression continued northward along the coast. Scattered thunder showers dampened the Texas Panhandle Monday and Tuesday. Amarillo received 1.23 inches of rain in 2-day period. A low, centered in the Dakotas and its associated fronts, produced light showers Tuesday and Wednesday. Two day totals were generally less than 1 inch, but exceeded 2 inches in spots. At Henry, 15 miles southwest of Watertown, South Dakota, strong winds blew down trees and large hail caused glass damage to buildings during a thunderstorm Wednesday evening. Watertown, South Dakota, received 1.93 inches in 24 hour period ending Thursday morning. Heavy rains in spots in Arizona caused some flooding Thursday evening. The weekend brought heavy storms to number of areas in the eastern half of the United States; hail as large as baseballs smashed windshields and windows and killed chickens in Bagley, Minnesota, Saturday. Also on Saturday, around 4 inches of rain fell at some localities in western Pennsylvania, and a thunder storm near Carbondale, Illinois, was accompanied by hail up to 3 inches in diameter and wind gusts reaching 80 m.p.h. Hail accumulated to depths of 3 feet in places. Strong winds blew down trees and fences 20 miles northwest of Akron, Ohio, Saturday afternoon. No rain or only widely scattered light sprinkles fell in California and much of the Great Basin. Precipitation was light and scattered over the northern Rocky Mountains and western portions of the northern and central Great Plains.

Weather of the week continued on page 620.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - COLORADO - Heavy on oats and grass near Fort Collins, Larimer County. Damage heavy and controls applied. (Hantsbarger). NEBRASKA - Larvae less than 1 per 25 plants in 2 fields near Shelby, Polk County. One field sprayed earlier showed about 10-15 percent loss of leaf tissue and feeding on 70 percent of ear tips. Spray application timed too late. Most pupated by August 17 (Keith, Kantor). Larvae damaged millet, up to 5 per square foot in Cheyenne, and Kimball Counties. Also damaged irrigated brome-wheatgrass pasture in Banner County; larvae ranged 6-7 per square foot, with 35 acres of 50-acre field destroyed. Parasites increased. (Hagan). Ranged 0-6, averaged about 1 per 25 ears in 74 cornfields surveyed in Dawson County (Pruess). GEORGIA - Larvae noted in pasture in Oglethorpe County (Carter); in lawn in Fannin County during period ending August 14. (Jordan, Coleman).

CORN EARWORM (Heliothis zea) - WASHINGTON - Heavy moth flight August 10, determined by light trap catches at Toppenish, Yakima County. (Landis). UTAH - Larvae moderate in sweet and field corn in Washington County (Huber); infestations ranged 0-10 (averaged 5) percent in Cache County sweet corn. (Knowlton, Thornley). ARIZONA - Some terminal damage on sorghum in Yuma Valley, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - This species and Trichoplusia ni (cabbage looper) required controls on young lettuce in Mesilla Valley, Dona Ana County. H. zea damage extensive but spotty on tomatoes. Some controls applied. Spotted light to medium on corn and sorghum in Curry and Roosevelt Counties. (N.M. Coop. Rpt.). COLORADO - Damage appearing; infestations range 20-95 percent in Arkansas Valley corn. (Schweissing). NEBRASKA - Very light; averaged less than 1 per 100 plants in 74 Dawson County fields (Pruess). None observed in 2 fields at Shelby, Polk County (Keith). Generally light in all fields surveyed. Infested 10, 20, and 50 percent of ears in Harlan, Furnas, and York Counties, respectively. Negative in Hamilton and Gosper Counties. (Helms).

KANSAS - Heliothis zea larvae averaged about 1 per ear in one field of corn in each of following counties: Morton, Meade, and Ford. Larvae in sorghum heads usually averaged less than 0.1 per head in Woodson, Allen, Bourbon, Crawford, and Labette Counties. None found on soybeans in these counties. (Bell). OKLAHOMA - H. zea moderate to heavy on sorghum in Alfalfa County and infested 25 percent of heads in Cotton County. Light in sorghum heads checked in Hughes and Pittsburg Counties. Light to moderate on peanuts in Hughes County. Reported dying on peanuts in Marshall County, apparently of virus disease. (Okla. Coop. Sur.). TEXAS - Larvae attacking sorghum in some panhandle counties. In gulf coast area larvae continued to damage grain sorghum. (Clymer, Cole). ALABAMA - Larvae (several stages) heavy in grain sorghum fields in Houston, Henry, Covington, Geneva, Coffee, and Crenshaw Counties. Larvae ranged 1-8 per head on several thousand acres. This species and Celama sorghiella (sorghum webworm) occurring in mixed populations and caused some growers problems in identification.
H. zea moth flights heavy. Small larvae light to heavy on peanut tips in many southeast area fields. Some growers expect to add control efforts with other treatments. (McQueen).

GEORGIA - During period ending August 14, Heliothis zea larvae heavy in 25 acres of corn in Catoosa County (Kendrick); fed in whorls in Clarke County (C.R. Jordan); and light throughout peanut-growing area (Womack). SOUTH CAROLINA - Larvae 3-4 per head of sorghum in Horry County (Sparks); eggs on soybean tips and up to 1 larval per 3 feet of row (Baskin). KENTUCKY - Larval damaged corn averaged 6 per 20 ear sample in Knott County. Larvae damage light to sorghum in Todd County. (Barnett). INDIANA - Fourteen cornfields in southwest district averaged 1.1 larvae per 100 ears. (Meyer). MARYLAND - H. zea moths averaged 14 per night in blacklight trap at Hurlock, Dorchester County. Infestations in late corn, beans, and soybeans expected to increase. (U. Md., Ent. Dept.). DELAWARE - Adults averaged 6 per night in Sussex County blacklight traps. (Burbutis, Lesiewicz). NEW YORK - In Hudson Valley, mostly fourth instar larvae 7 per 100 tips of sweet corn noted August 13 at New Paltz in one planting.

(N.Y. Wkly. Rpt.). WISCONSIN - Few larvae found in ears in Sheboygan County and individual moths appearing sporadically in blacklight traps as far north as Hancock. (Wis. Ins. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - ARIZONA - Commercial applicators and growers report spotted light infestations on sorghum in Yuma area, Yuma County. Heavy on lower third of plants at Safford, Graham County. (Ariz. Coop. Sur.). OKLAHOMA - Heavy on sorghum in Jackson and Cotton Counties. Ranged up to 1,000 per leaf in Jackson County. (Okla. Coop. Sur.). MAINE - Populations very light to light in 16 fields in which *Coleomegilla maculata* (a lady beetle) adults and larvae found in southern and western areas. Some *Coccinella transversoguttata* (transverse lady beetle) adults and larvae noted. (Gall).

GREENBUG (*Schizaphis graminum*) - TEXAS - Generally declined in all areas reported. Beneficial insects helped in greenbug control in most areas. Some isolated areas may still have heavy greenbug populations; moderate increase in Trans-Pecos area. (Clymer et al.). OKLAHOMA - Moderate to heavy on sorghum in Roger Mills County. Controls underway. Moderate and declining in Cimarron County sorghum. Ranged 5-10 per plant on volunteer wheat and damaged some early planted wheat in Cimarron County. (Okla. Coop. Sur.). COLORADO - Found in most areas of Arkansas Valley on sorghum. Heaviest in Crowley and Prowers Counties, lower 4-5 leaves lost in late-planted fields. (Schweissing). KANSAS - Population on sorghum in southwest and west-central districts generally light and heavily parasitized by unspecified parasitic wasps. Limited surveys in other areas showed no greenbugs and/or evidence of parasitism. (Bell).

HORNWORMS (*Manduca* spp.) - DELAWARE - Adults averaged 4 per night in Sussex County black light traps. (Burbutis, Lesiewicz). NEW MEXICO - Some *M. quinquemaculata* (tomato hornworm) noted on tomatoes in Dona Ana County. (N.M. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Light to moderate on alfalfa in Garvin County. (Okla. Coop. Sur.). COLORADO - Ranged 0-1,000 per 100 sweeps of alfalfa in Arkansas Valley fields. (Schweissing).

TOBACCO BUDWORM (*Heliothis virescens*) - MARYLAND - Light to moderate on tobacco in Prince Georges County. (U. Md., Ent. Dept.). NORTH CAROLINA - In Columbus and Bladen Counties, 224 of 470 fields checked with infestations at 10 percent or above. Larvae 1 inch or more on 25 percent of plants. (Kornegay et al.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MAINE - Infestations 0-10 percent. Moths in traps at Portland (Schaffer) indicating possible second generation. Most not pupated. (Gall). NEW YORK - In Hudson Valley, moth collections heavy; 100 in 2 traps on August 10. In corn ears and whorls largest larvae third instar. (N.Y. Wkly. Rpt.). DELAWARE - Adults averaged 76 per night in blacklight trap at Bridgeville, Sussex County. Egg masses average 1 per 10 pepper plants with infestation of fruit averaging 28 percent in untreated plants. (Burbutis, Lesiewicz). MARYLAND - Moths averaged 16 per night in blacklight trap at Hurlock, Dorchester County. (U. Md., Ent. Dept.). INDIANA - Seven fields in Knox County averaged 26 percent infestation with second-generation larvae (range 2-56 percent) with average of 45 larvae per 100 stalks (range 140 per 100 stalks). Seven fields in Posey County averaged 15 percent infested (range 0-32 percent) with an average of 28 larvae per 100 stalks (range 0-64 per 100 stalks). Larvae ranged second instar to full grown, with pupation occasional in more southern Posey County area. (Meyer). WISCONSIN - Feeding damage continues light in northeastern counties near Green Bay and eggs scarce in that area. Feeding injury more evident in central counties and eggs easy to find. Egg masses on August 18 appeared freshly laid. Moth catches heavy in most blacklight traps. (Wis. Ins. Sur.). MINNESOTA - Moth counts increased at Worthington, Shakopee, and at Rochester. Six moths collected August 11, 509 August 12, 1,400 August 13 in blacklight trap. Eggs in southeast district. (Minn. Pest Rpt.). SOUTH DAKOTA -

Very heavy moth flight night of August 12; along Interstate 90 between Mitchell, Sanborn County, and Salem, McCook County. (Jones).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Larvae moderate to heavy on sorghum in Alfalfa and Roger Mills Counties and light to moderate in Garvin County. Heavy on corn in Jackson and Cimarron Counties. (Okla. Coop. Sur.). TEXAS - Infestations heavy on sorghum and rangeland throughout State. (Green). ALABAMA - Larval outbreak in young grain sorghum in Houston, Henry, Geneva, Covington, Crenshaw, Coffee, and Dale Counties. (McQueen). SOUTH CAROLINA - Infested 15 acres of sorghum in Saluda County, heavy damage on 3 acres. Also reported infesting several fields of sorghum in Chester County. Eggs and larvae present. (Nettles). KENTUCKY - Larvae damaged corn in Webster, Hopkins, Henderson, and Christian Counties. (Barnett). MARYLAND - Generally moderate to heavy; several fields in Frederick County show infestations over 50 percent. (U. Md., Ent. Dept.). INDIANA - Common in tips of corn ears; larvae reported from Clay County, Scott County, and Posey County causing damage in whorls of late-planted corn. (Gould et al.). WISCONSIN - Few adults beginning to appear in blacklight trap catches in Manitowoc area. Some fields near Sheboygan show light feeding damage and larvae nearly mature. (Wis. Ins. Sur.).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Generally light. Heaviest infestations in late-planted corn. Individual fields in Hamilton, Butler, and Dundy Counties, with larvae up to 37 per 25 ears. Larvae light, 5 or less per 25 plants in single fields examined in York, Colfax, Gosper, Furnas, Harlan, and Dundy Counties. Negative in Dawson County (2 fields), Gosper County (3 additional fields) and Dundy County (2 additional fields) and Perkins County (1 field). Ranged 0-8, averaged about 0.5 larvae per 25 ears in 74 Dawson County fields (Pruess). Averaged 15 per 25 ears in field near Shelby, Polk County (Keith et al.). KANSAS - Larvae (second to late instars) averaged 0.3 per plant in cornfield in Wichita County. Larvae present, but difficult to find in one field in each of following counties: Logan, Gove, Scott, and Rawlins. New county records include Scott, Gove, and Rawlins. Determinations by M.L. Shuman and K.O. Bell. (Bell).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - UTAH - During period ending August 12, damaged corn in Box Elder County. This is a new county record. (Knowlton, Roberts). Much lodging noted in Cache County. (Thornley). Current injury to corn for ensilage, in Richmond area of Cache County, will make mechanical harvesting difficult. (Thornley, Knowlton). NEBRASKA - Ranged 1-95, averaged about 21 per 25 corn plants examined in 40 Dawson County fields. (Pruess).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - In Crawford County, adults ranged 1-17 per silk, average 1.7. Individual field averages as high as 4.5 adults per silk. In Morrow County, adults averaged 0.04 per silk in field corn. Although very little feeding occurred on silks adult beetles present in greater densities than reflected by silk-feeding readings. (Andress). NORTH CAROLINA - Adults collected from fresh corn silks in Yadkin, Wilkes, Surry, and Stokes Counties. Heaviest in Surry County. These are new county records. (Bradley, Hunt). TENNESSEE - Adults abundant on corn silk in several fields in Weakley County. Heavy root damage noted. (Pless). Adults feeding on silk in field in Morgan County for a new county record. Collected by Hadden. Determined by Mullett. (Gordon).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - Statewide survey begun. Populations generally heavy although erratic in southern and southwestern counties. Populations light in northeastern counties. Lodging light or absent in most fields. Lodging ranged 10-80 percent in minority of fields. Severe leaf and silk feeding evident in some fields. D. virgifera (western corn rootworm) dominant in Manitowoc and Sheboygan Counties near Lake Michigan and in Grant, Iowa, Lafayette, Green, Rock, and Dane Counties. (Wis. Ins. Sur.). MINNESOTA - Adults averaged 5 per plant and 60 percent lodged in Washington County field. Counts of 99 D. longicornis (northern corn rootworm) and 6 D. virgifera adults on 10 corn plants in Wabasha

County field with 50 percent lodging. In Goodhue County field, D. longicornis 66 and D. virgifera 3 on 10 plants with 30 percent lodging. (Minn. Pest Rpt.).

SORGHUM WEBWORM (Celama sorghiella) - ALABAMA - During period ending August 13, surveys indicated larvae heavy, 1-4 per grain head in sorghum in large Coffee County field. Some controls needed. (Cassady et al.). This period larvae ranged 1-10 in grain sorghum heads on several thousand acres throughout Houston, Henry, Geneva, Covington, Crenshaw, Coffee, and other counties. All ages present in mixed populations with Heliothis zea (corn earworm). Control efforts general. (McQueen). KENTUCKY - C. sorghiella larvae ranged 3-4 per grain sorghum head in fields in Todd County. Controls applied. (Barnett).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae completely destroyed acre of 10 acre grain sorghum field and damaged noted throughout field at Hodgesville in Houston County. (Stephenson et al.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MARYLAND - Larval infestations ranged light to heavy on corn in Marion and Fayette Counties. One 3 acre field of corn in Fayette County, 25 to 30 percent stalk infestation. Larvae attacking 40 to 50 percent stalks and ears in 18-acre field at Guin in Marion County. (Pigott).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Infesting sorghum for grain or ensilage throughout State. Sorghum planted late and that still in bloom should be watched closely. (Robinson).

BANKS GRASS MITE (Oligonychus pratensis) - WYOMING - Corn plants ranged 0-30 percent infested in 6 Park County fields. Heavy, damage severe to lower 4-8 leaves and in some cases 10-12 leaves near Thermopolis, Hot Springs County. (Burkhardt). COLORADO - Light to heavy throughout Arkansas Valley corn. Most damage in Otero County. (Schweissing). OKLAHOMA - Continues to build up in scattered cornfields in panhandle counties. (Okla. Coop. Sur.). TEXAS - Heavy in El Paso County on grain sorghum. Plants in heavily infested fields show 0.75 of total leaves completely dessicated. Light in Dell City area of Hedspeth County on grain sorghum. Light in Pecos and Reeves Counties. Several grain sorghum fields in Dallam County show light to moderate infestations. Cool, damp weather helped to keep mites below economic level. Mite populations in the South Plains near Lubbock, decreased greatly during cool, wet weather. (Neeb et al.).

SPIDER MITES - UTAH - Populations of Tetranychus urticae (twospotted spider mite) and Oligonychus pratensis (Banks grass mite) caused moderate to severe discoloration and drying of corn foliage in Washington County (Huber), also in portions of Sanpete, Sevier, Emery, Utah, Salt Lake, and Kane Counties (Knowlton); field corn being aerially treated. (Horne).

TURF, PASTURES, RANGELAND

A LEAFHOPPER (Euscelis ohausi (Wagner)) - OREGON - Collected fourth and fifth instar nymphs on Scotch broom (Cytisus scoparius) on June 28, 1970, near Corvallis, Benton County, by P. Oman. Determined by P. Oman. This is a new North American record. Distribution Europe. (Oman).

A TREEHOPPER (Gargara genitsae) - OREGON - Collected adults on Scotch broom (Cytisus scoparius) on July 27, 1970 near Corvallis, Benton County, by P. Oman. Determined by P. Oman. This is a new State record. (Oman). Recorded from Washington, Connecticut, New Jersey, Italy, Spain, Austria, Germany, France, and England. (PPD).

CHINCH BUGS (Blissus spp.) - MAINE - B. leucopterus leucopterus (chinch bug) reported from southern and western areas. Two lawns severely damaged but concern with invasion of homes. (Gall). PENNSYLVANIA - B. leucopterus hirtus and B. leucopterus leucopterus moderate on many lawns, nymphs and adults caused up to 80 percent damage in Centre County. (Gesell). OHIO - B. leucopterus hirtus (hairy chinch bug) nymphs 130 per square foot in infested lawns in Wayne County. (Niemczyk). FLORIDA - Probably Blissus insularis (southern chinch bug) severe and damaging torpedo grass, Panicum repens, pastures at ranch near Ft. Pierce, St. Lucie County August 11. (Kretschmer).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - OREGON - Moths (freshly emerged) appearing for first time in blacklight trap located near Macleay, Marion County. (Westcott, Long).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Averaged 45 per 100 sweeps in 4 fields of alfalfa in Yuma area. Ranged 20-250 per 100 sweeps of alfalfa in Parker Valley, Yuma County. (Ariz. Coop. Sur.). COLORADO - Heavy in some fields of eastern Bent and western Prowers Counties; damage evident. (Schweissing). NEW MEXICO - Moth flights increased. Most alfalfa in Mesilla Valley, Dona Ana County, cut; larvae counts light. Counts of 1-4 per 25 sweeps of alfalfa in Chaves County. (Mathews).

VARIEGATED CUTWORM (Peridroma saucia) - NEBRASKA - Larvae ranged 4-5 per square foot of alfalfa in Scotts Bluff, Morrill, and Sioux Counties. Larvae 2-3 per plant on sugar beets and up to 4 per plant on potatoes observed. (Hagen).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Averaged 55 per 100 sweeps in 4 alfalfa fields in Yuma area, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUG (Lygus sp.) - ARIZONA - Averaged 550 per 100 sweeps in 5 alfalfa fields in Yuma area, Yuma County. Ranged 10-30 adults and 4-20 nymphs per 100 sweeps in Parker Valley alfalfa. (Ariz. Coop. Sur.). WYOMING - Ranged per 10 sweeps of forage: 0-12 near Powell and 40-50 near Meteetsee, Park County (Murray); 0-70 in 2 Hot Springs County fields. (Parshall).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Averaging 185 per 100 sweeps in 4 alfalfa fields in Yuma area, Yuma County. (Ariz. Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - MAINE - Adults ranged 5-15 and nymphs 5-45 per 5 sweeps of alfalfa in southern and western areas. (Gall).

PEA APHID (Acyrthosiphon pisum) - COLORADO - Ranged 100-4,000 per 100 sweeps of alfalfa in Arkansas Valley. (Schweissing). KANSAS - Counts per 10 sweeps of irrigated alfalfa: up to 2,000 in Scott County field and 1,000 in Kearny County field. (Bell). MARYLAND - Averaged 50+ per sweep of alfalfa in 3 Frederick County fields. (U. Md., Ent. Dept.).

ALFALFA WEEVIL (Hypera postica) - COLORADO - Continues to increase; ranged 0-1,000 per 100 sweeps in Arkansas Valley fields. (Schweissing).

LEAFMINER FLIES (Agromyza spp.) - MASSACHUSETTS - Adults 482 per 100 sweeps in 2 forage fields in Hampshire County. (Miller).

SOYBEANS

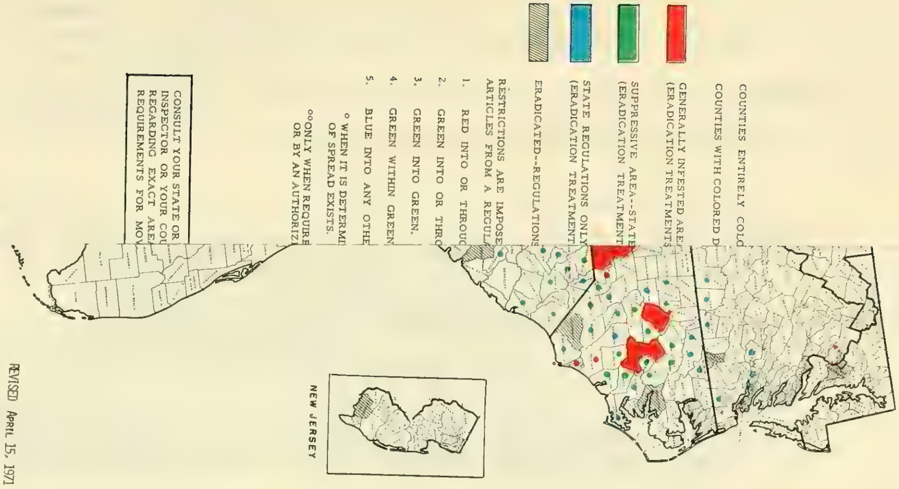
TOBACCO MOTH (Ephestia elutella) - SOUTH CAROLINA - Larvae damaged about 1,200 pounds of cured tobacco in packhouse in Florence County. (Johnson).

COTTON

BOLLWORMS (Heliothis spp.) - NEW MEXICO - H. zea light in Eddy and Chaves Counties. (Mathews). Scattered populations on cotton in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - In McLennan and Falls Counties, eggs averaged 1.7 and larvae 2.3 per 100 terminals in 22 fields. Injured squares averaged 7.2 percent and injured bolls 7.4 percent. Of 804 larvae collected and identified, 83 or 10 percent H. virescens. (Cowan et al.). OKLAHOMA - Small H. zea larvae infested 18-20 percent of terminals in dryland cotton in Grady County. Damage averaged 25 percent in some fields where rain hindered controls. Light to moderate in Bryan, Garvin, and Cotton Counties. Larvae averaged 5 percent and eggs 7 percent in Newcastle area, McClain County. (Okla. Coop. Sur.). ARKANSAS - Infestations near normal for August. Of 6,972 fields surveyed, 5,475 infested and 1,505 needed controls. (Boyer et al.). LOUISIANA - Egg counts increased in Red River Valley; indicates new generation. (Tynes et al.). In Madison Parish, damaged squares in 104 of 109 plots. Infestations ranged 1-10 (averaged 3.5) percent in infested plots. Moths increased; total of 116 H. zea collected. (Cleveland et al.). MISSISSIPPI - In delta counties, moth collections increased but no eggs in terminals. Trap located top of 90-foot building recovered over twice as many H. zea as trap located at 6 foot level. May indicate long range dispersal underway. Damaged squares averaged 0.8 (maximum 2) percent in 6 of 8 fields. (Pfrimmer et al.). Few eggs noted statewide. Survey of late instar larvae from Noxubee County indicate 80 percent H. virescens. (Robinson). TENNESSEE - H. zea continues to increase sharply in rank cotton throughout western areas. Eggs and larvae ranged 1-25 per 100 terminals. Eggs on underside of leaves, on stems, squares, and down in plant. Much damage expected where control not timed to kill small larvae. Further increase expected. (Locke).

ALABAMA - Heliothis zea moth flights very heavy in south and central areas and increased in northern areas. Egg laying heavy, counts of 5-100 per 100 stalks in many south and central area fields. Very few moths observed in south areas. (McQueen). GEORGIA - During period ending August 14, egg laying remained heavy in southern areas, up to 100 eggs and 0-15 larvae per 100 terminals. (Womack). For period ending August 21, eggs ranged 0-52 (averaged 14) and larvae 2-30 (averaged 8) per 100 squares in 30 Randolph and Terrell County fields; some difficulties in control (Womack); square damage light in Spalding County. (Tippens). SOUTH CAROLINA - In Aiken County, total of 1,512 moths recovered from light trap during period August 9-12. (Nettles). In Florence County, populations continue to increase. In light trap collected 665 H. zea and one H. virescens. (Taft et al.). Egg laying increased statewide. Appears to be no distinct broods in fields, with first instar to full-grown larvae present in same fields. Generally crop damage much lower than that caused by populations in August 1970. (Sparks). NORTH CAROLINA - Larvae increased from less than 10 to 50+ in 1.5 weeks in Johnston County. Also increasing in Bertie County. (Bradley).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In McLennan and Falls Counties, punctured squares averaged 16.7 (maximum 40.3) percent in 10 treated fields; averaged 27.6 (maximum 51.1) percent in 12 untreated fields. (Cowan et al.). OKLAHOMA - Infestations ranged 15-45 percent on cotton in Tillman County and 10-20 percent in Jackson and Marshall Counties. Moderate in Bryan and Garvin Counties and in Cotton County. (Okla. Coop. Sur.). ARKANSAS - Young adults in blooms in many fields. Of 6,972 fields surveyed, 5,755 infested and 1,708 needed controls. (Boyer et al.). LOUISIANA - Expect another peak emergence from squares on ground August 16-23. Populations still heavy in many fields. (Tynes et al.). In Madison Parish, no weevils recovered from sticky traps. Punctured squares ranged 7-59 (averaged 25.9) percent in 109 plots. (Cleveland et al.). MISSISSIPPI - In delta counties, punctured squares averaged 16.6 (maximum 62.5) percent in 7 of 8 fields. No weevils taken on pheromone-baited wing traps. (Pfrimmer et al.). TENNESSEE - Damage heavy in late cotton. Control difficult due to rains and rank cotton. Small boll damage heavy in fields where squares scarce. Migration to those counties to north occurring where no infestations noted earlier in season. Punctured squares in some of these areas as high as 60 percent. Further increase expected throughout cotton-growing area. Many fields of older cotton have "cut-out" and are no longer attractive to weevils in western areas. (Locke). ALABAMA - Adults still heavy throughout south and central areas and major cotton-producing areas of Tennessee River Valley. (McQueen). GEORGIA - During period ending August 14, punctured squares ranged 2-78 percent in Gordon County (Dyer, Womack); increased in southern areas, punctured squares up to 85 percent in fields where controls stopped or delayed. (Womack). For period ending August 21, punctured squares ranged 0-35 percent in 30 fields in Randolph and Terrell Counties, where control practices satisfactory (Womack); percent punctured squares, 7 in treated



REVISED April 15, 1971

approved pesticide.

13. Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties.

Forest products, such as pulpwood, stumpwood, logs,

WHITEFRINGED BEETLE QUARANTINES

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE - PLANT PROTECTION DIVISION
COOPERATING WITH AFFECTED STATES

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED;

COUNTIES WITH COLORED DOT ARE PARTIALLY REGULATED.

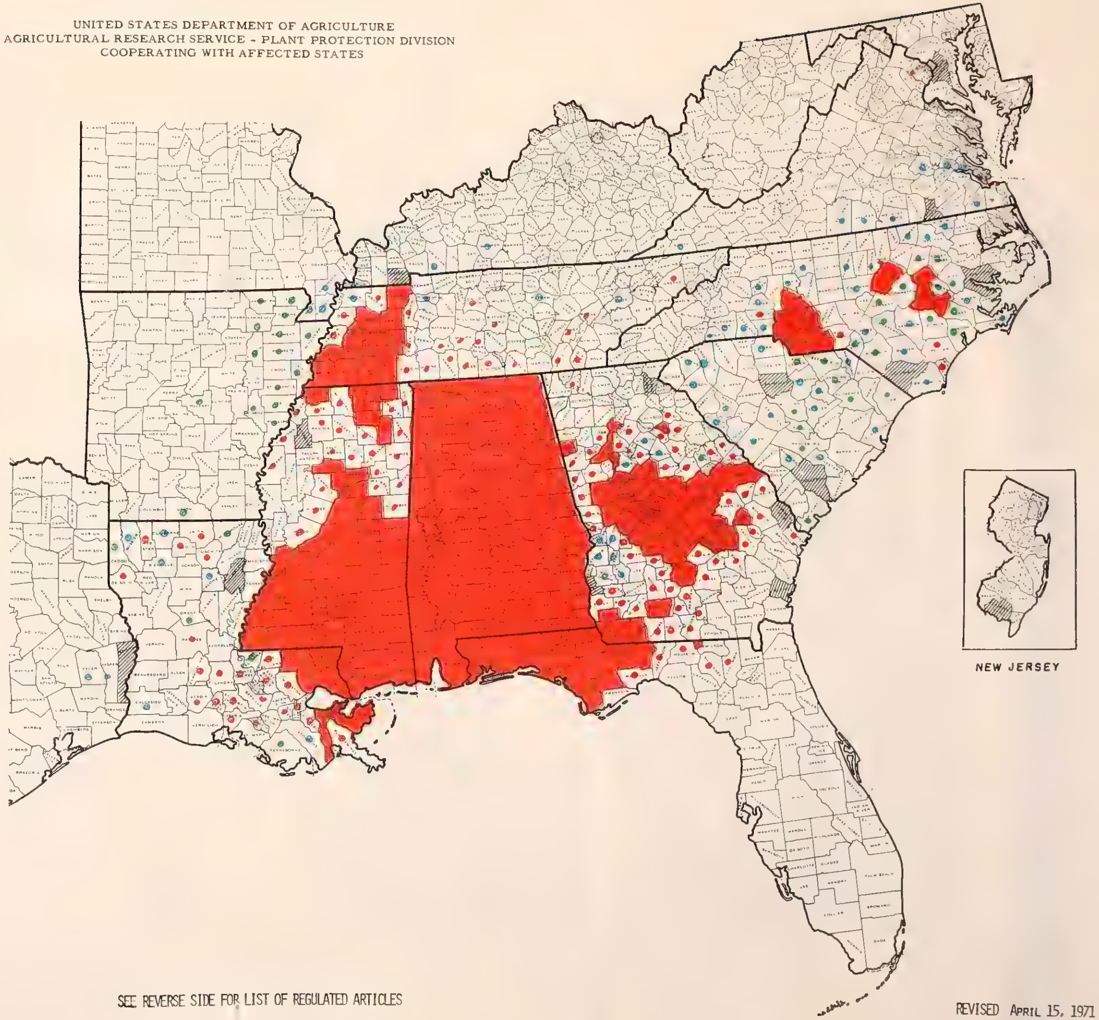
🟥	GENERALLY INFESTED AREA--STATE AND FEDERAL REGULATIONS. (ERADICATION TREATMENTS NOT IN PROGRESS OR PLANNED.)
🟩	SUPPRESSIVE AREA--STATE AND FEDERAL REGULATIONS. (ERADICATION TREATMENTS APPLIED OR IN PROGRESS.)
🟦	STATE REGULATIONS ONLY. (ERADICATION TREATMENTS APPLIED OR IN PROGRESS.)
▨	ERADICATED--REGULATIONS REMOVED.

RESTRICTIONS ARE IMPOSED ON THE MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

1. RED INTO OR THROUGH GREEN, BLUE, OR WHITE.
2. GREEN INTO OR THROUGH BLUE OR WHITE.
3. GREEN INTO GREEN.
4. GREEN WITHIN GREEN°.
5. BLUE INTO ANY OTHER AREA°°.

° WHEN IT IS DETERMINED BY THE INSPECTOR THAT A HAZARD OF SPREAD EXISTS.

°° ONLY WHEN REQUIRED BY STATE QUARANTINE REGULATIONS OR BY AN AUTHORIZED INSPECTOR.



CONSULT YOUR STATE OR FEDERAL PLANT PROTECTION INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

SEE REVERSE SIDE FOR LIST OF REGULATED ARTICLES

REVISED April 15, 1971

lumber, and crossties are exempt***if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.

14. Used mechanized cultivating equipment and used harvesting machinery.

15. Used mechanized soil-moving equipment.

16. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of whitefringed beetles and the person in possession thereof has been so notified.

THE FOLLOWING REGULATED ARTICLES MOVED FROM SUPPRESSIVE (GREEN) AND STATE REGULATED (BLUE) AREAS REQUIRE A CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED: *

1. Bulk soil.
2. Used mechanized soil-moving equipment.
3. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of whitefringed beetles and the person in possession thereof has been so notified.

* See "Restrictions Imposed on Movement of Regulated Articles" on the reverse side.

** Information as to designated laboratories and gins may be obtained from an inspector.

*** Exempt if not exposed to infestation after cleaning or other prescribed handling.

plots and 90 in untreated plots in Spalding County. (Tippens). SOUTH CAROLINA - Percent damaged squares ranged 0-90 (averaged 5-8) statewide in well protected fields, and 50-60 in fields where rain continues to interfere with control. Migration stabilized at lower levels than 1970. (Sparks). SOUTH CAROLINA - In Florence County, populations large enough to destroy all squares in unprotected fields. Migration increasing rapidly. Top crop threatened if controls fail. (Taft et al.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - CALIFORNIA - Sharp increase in Imperial Valley desert cotton. Previously infestations spotty. Repeat applications of pesticides will be necessary. (Cal. Coop. Rpt.). ARIZONA - Still factor in cotton and treatments applied at Yuma. Building up, but due to switch of material now under control in Parker Valley, Yuma County. (Ariz. Coop. Sur.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Heavy, over 50 per plant, on tobacco in southern Prince Georges County. (U. Md., Ent. Dept.).

DIFFERNTIAL GRASSHOPPER (Melanoplus differentialis) - KENTUCKY - Counts of 3-4 per plant in Madison County. One field showed 20-30 percent of foliar area destroyed. (Barnett).

SUGAR BEETS

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - WASHINGTON - All stages increasing on sugar beets at Toppenish, Yakima County. Damaged carrots grown for seed throughout Grant County; in most fields 50 percent or more seed heads webbed. (Landis, Hunter).

MISCELLANEOUS FIELD CROPS

BANDED SUNFLOWER MOTH (Phalonia hospes) - NORTH DAKOTA - In Cass County field, larvae 1-20 per head on 40 percent of sunflower heads. Damage evident on heavier infested heads. (Brandvik).

SUNFLOWER MAGGOT (Strauzia longipennis) - NORTH DAKOTA - Infestations in all fields sampled in Ransom, Steele, Walsh, Pembina, and Grand Forks Counties. In Barnes County, 50 percent of sunflower fields infested. Infested stems in fields ranged up to 100 percent in Pembina and Grand Forks Counties. (Brandvik, Kaatz).

A TEPHRITID (Gymnocarena diffusa) - NORTH DAKOTA - Heaviest infestations in Grand Forks County, 14 percent of fields infested. Up to 60 percent of sunflower heads infested. Larvae in receptacle of heads. (Kaatz).

A GALL MIDGE (Contarinia sp.) - NORTH DAKOTA - Surveys indicate no infestations in Ransom and Barnes Counties. Steele, Walsh, Pembina and Grand Forks Counties show less than 1 percent of sunflower heads damaged. Larvae no longer present in previously infested heads. (Brandvik, Kaatz).

POTATOES, TOMATOES, PEPPERS

GREEN PEACH APHID (Myzus persicae) - OREGON - Infested leaves ranged 35-100 per 100 leaf sample. Populations building up since early July and controls ineffective. Leaf roll symptoms heaviest in years and some growers may not harvest. Growers with potatoes for seed most seriously affected. About 2,500 acres affected in Klamath Falls area of Klamath County. (Schuh). INDIANA - Economic numbers observed in 2 of 5 pepper fields in northwest district. (Matthew). IDAHO - Populations in potato seed-producing areas mostly in field margins on weed host plants. Populations near normal in eastern area. (Spencer et al.).

THE FOLLOWING REGULATED ARTICLES MOVED FROM GENERALLY INFESTED AREAS (RED) REQUIRE A CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED: *

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.
   Soil samples shipped to approved laboratories do not require attachment of certificate or permit.**
   Compost, decomposed manure, humus, and peat are exempt*** if dehydrated, ground, pulverized, or compressed.
2. Plants with roots.
3. Grass sod.
4. Plant crowns and roots for propagation.
5. True bulbs, corms, rhizomes, and tubers of ornamental plants when freshly harvested or uncured.
6. Potatoes (Irish) when freshly harvested.
7. Peanuts in shells and peanut shells, except boiled or roasted peanuts.
8. Uncleaned grass, grain, and legume seed.
9. Hay and straw.
10. Seed cotton.
    Seed cotton is exempt if moving to a designated gin.***
11. Scrap metal and junk.
12. Brick, stone, concrete slabs, drainage pipes, and building blocks.
    Brick, stone, concrete slabs, drainage pipes, and building blocks are exempt***if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.
13. Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties.
    Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties are exempt***if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.
14. Used mechanized cultivating equipment and used harvesting machinery.
15. Used mechanized soil-moving equipment.
16. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of whitefringed beetles and the person in possession thereof has been so notified.

THE FOLLOWING REGULATED ARTICLES MOVED FROM SUPPRESSIVE (GREEN) AND STATE REGULATED (BLUE) AREAS REQUIRE A CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED: *

1. Bulk soil.
2. Used mechanized soil-moving equipment.
3. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of whitefringed beetles and the person in possession thereof has been so notified.

* See "Restrictions Imposed on Movement of Regulated Articles" on the reverse side.

** Information as to designated laboratories and gins may be obtained from an inspector.

*** Exempt if not exposed to infestation after cleaning or other prescribed handling.

FALSE CELERY LEAF TIER (Udea profundalis) - CALIFORNIA - Larvae and adults heavy in 40 acre planting of bell peppers in Patterson area, Stanislaus County. Major infestation first and second instar larvae. Larger ready to pupate larvae noted. Damage evident. This is new host record. (Cal. Coop. Rpt.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - COLORADO - Adults and larvae increased up to 24 per 10 sweeps in some fields in Weld County. (Hantsbarger).

A WEEVIL (Pantomorus taeniatulus) - ALABAMA - During period ending August 13, noted unusual damage to 30 acres of potatoes in Jackson County. Larvae (several instars) damaged 15 percent of tubers in field, ranged 1-14 holes per tuber and up to 1.5 inches deep. Some larvae still in tubers. Field fallow during 1970. (Gardenhire, Dulaney).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Moths increasing in blacklight trap at Hurlock, Dorchester County. (U. Md., Ent. Dept.).

DETECTION

New North American Record - A LEAFHOPPER (Euscelis ohausi (Wagner)) - OREGON - Benton County. (p. 616).

New State Records - AN EURYTOMID WASP (Eudecatoma marylandica) - PENNSYLVANIA - Schuylkill County. (p. 622). A TREEHOPPER (Gargara genitsae) - OREGON - Benton County. (p. 616).

New County Records - AN APHID (Panaphis juglandis) CALIFORNIA - Butte (p. 621). AN ARMORED SCALE (Phenacaspis cockerelli) SOUTH CAROLINA - Horry (p. 622). AN ARMORED SCALE (Parlatoria crotonis) FLORIDA - Gadsden (p. 622). A EULOPHID WASP (Tetrastichus incertus) OHIO - Guernsey, Coshocton (p. 624). GYPSY MOTH (Porthetria dispar) NEW MEXICO - Monroe, Seneca (p. 624). MIMOSA WEBWORM (Homadaula anisocentra) OKLAHOMA - Pushmataha (p. 622). NORTHERN CORN ROOTWORM (Diabrotica longicornis) NORTH CAROLINA - Yadkin, Wilkes, Surry, Stokes; TENNESSEE - Morgan (p. 615). WESTERN BEAN CUTWORM (Loxagrotis albicosta) KANSAS - Scott, Gove, Rawlins (p. 615). WESTERN CORN ROOTWORM (Diabrotica virgifera) UTAH - Box Elder (p. 615).

Weather of the week continued from page 612.

TEMPERATURE: Clear skies prevalied over most of the Nation early in the week. Temperatures averaged near seasonal, except somewhat warmer than normal over the northern Great Plains, where Havre, Montana, registered 101° and Mobridge, North Dakota, 99° Monday afternoon. The Far Southwest warmed to 100° or higher on most days. Daggett, California, recorded 108° Tuesday afternoon. Early autumn chill was noted in the central Rocky Mountains. The mercury at Big Piney, Wyoming, tumbled to 28° Thursday morning. The minimums over the East ranged from the 40's and 50's along the Canadian border, to the upper 60's and 70's from Texas to the Carolinas, Georgia, and Florida. Bradford, Pennsylvania, recorded 39° Tuesday morning. Maximums over the East ranged from the 70's in the Great Lakes region and New England to the 80's and low 90's in the Deep South. A warming trend occurred in Northeast and by Thursday afternoon temperatures in the 80's became widespread. Rochester, New York, recorded 91° Thursday afternoon. The northern Great Plains warmed over the weekend. Numerous stations in the Dakotas and Nebraska registered 100° or higher on Saturday or Sunday. Temperature at Philip, South Dakota, reached 106° Sunday afternoon. The relative humidity increased in the Southwest and the Southeast continued warm and humid. The weekly mean temperatures were mostly below normal across the southern third of the Nation and warmer than normal over the northern two thirds. Parts of the northern Great Plains averaged 6° to 10° warmer than normal.

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - WISCONSIN - Few adults in blacklight trap at Seymour, Columbia County. Examination of apples revealed larvae in first to last instar; second brood begun. (Wis. Ins. Sur.). ARIZONA - About 75 percent of apples infested in yard plantings at Safford, Graham County. (Ariz. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - UTAH - T. mcdanieli (McDaniel spider mite) and T. urticae (twospotted spider mite) damage moderate to severe in apple and pear orchards in Utah County. Control difficult. (Horne).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Populations peaked in Medford area, Jackson County, August 2. (Berry).

AN APHID (Panaphis juglandis) - CALIFORNIA - Adults 60 per leaf on 30-acre walnut planting in Gridley, Butte County. This is a new county record. (Cal. Coop. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Second-generation damage ranged 5-10 percent in Garvin County. (Okla. Coop. Sur.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Heavy on pecans in Tulsa County and light in Garvin County. (Okla. Coop. Sur.).

BLACKMARGINED APHID (Monellia costalis) - OKLAHOMA - Heavy on pecan trees in Tulsa and Payne Counties. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - WEST VIRGINIA - Larvae damage light to black walnut in Gilmer County. Defoliation light to wild cherry in Pleasants County, August 11. (W. Va. Ins. Sur.).

CITRUS

Insect Situation in Florida - Mid-August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 80 (norm 59) percent of groves; economic in 67 (norm 45) percent. Decreased slightly and will continue to decrease. Will remain much above normal and in high range. All districts high. Mites more numerous on fruits than on leaves. CITRUS RED MITE (Panonychus citri) infested 48 (norm 44) percent of groves; economic in 23 (norm 22) percent. Decreased greatly and now near normal and in moderate range. Further decrease expected. Highest districts west and south. Very few infestations will be important through September. TEXAS CITRUS MITE (Eutetranychus banksi) infested 42 (norm 46) percent of groves; economic in 14 (norm 21) percent. Sharp drop; population below normal and into low range. Further decrease expected through September in all districts. GLOVER SCALE (Lepidosaphes gloverii) infested 71 (norm 61) percent of groves; economic in 12 (norm 15) percent. Population near normal and at moderate level. Slight decrease expected until mid-September. Highest districts south and west. PURPLE SCALE (L. beckii) infested 57 (norm 56) percent of groves; economic in 1 (norm 3) percent. CHAFF SCALE (Parlatoria pergandii) infested 44 (norm 48) percent of groves; economic in 2 (norm 4) percent.YELLOW SCALE (Aonidiella citrina) infested 29 (norm 55) percent of groves; economic in none (norm 6) percent. These three scales below normal abundance in all districts. All will be at low level. BLACK SCALE (Saissetia oleae) infested 58 (norm 58) percent of groves; economic in 32 (norm 49) percent. Reached summer peak of abundance late July. Will decrease to low level August through October. Peak was in high range but much below normal. Districts vary highest east and lowest north. A ARMORED SCALE (Unaspis citri) infested 21 percent of groves; economic in 21 percent. Population similar in size to that of preceding 5 months and higher than in any prior year. Temporary decrease expected. WHITEFLIES infested 73 percent of groves; economic in 23 percent. Declined to moderate level but still above normal. Further decrease expected through August, followed by slight increase in September. Highest district east. MEALYBUGS declined to normal low level and not likely to be of concern for remainder of year. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

ORNAMENTALS

AN ARMORED SCALE (Parlatoria crotonis) FLORIDA - Taken on croton at nursery in Chattahoochee, Gadsden County, May 7, 1971, by R.H. Miller and A.E. Graham. This is a new county record. (Fla. Coop. Sur.).

AN ARMORED SCALE (Phenacaspis cockerelli) - SOUTH CAROLINA - Reported from Horry County on Magnolia. This is a new county record. (Weeks).

FOREST AND SHADE TREES

DOUGLAS FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - CALIFORNIA - New infestation in estimated 3,000 acre stand of mixed forest and private property in El Dorado National Forest, El Dorado County. Mixed populations from light to heavy at Nevada Point, Georgetown area, and along Rubicon River eastward. (Cal. Coop. Sur.).

OAK LEAF TIER (Croesia semipurpurana) - PENNSYLVANIA - Heavy to complete defoliation observed in 1,000 acre area of Cumberland County (second year infestation); light to moderate defoliation (under 60 percent) observed in 700 acre area and heavy to complete defoliation in 6,300 acre area in Union County with increasing trend. (Nichols, Aug. 12).

LARCH CASEBEARER (Coleophora laricella) - OREGON - Very rapid and unexpected southward movement in Umatilla County larch. Originally detected at Tollgate June 1970, this species spread into Emigrant Park area between Pendleton and La Grande and into Battle Mountain State Park, located 35 miles south of Pendleton. (Kline).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - MISSOURI - Heavy moth flights at lights in Boone County. (Craig).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Light to heavy on mimosa in Antlers, Pushmataha County, for a new county record. (Okla. Coop. Sur.).

A NOTODONTID MOTH (Symmerista canicosta) - MICHIGAN - Defoliation noticeable in Wolf Lake Area, Lake County and in East Lake, Manistee County. In Muskegon and White Cloud areas, Newaygo County defoliation just started. Complete defoliation expected at all of these sites. (Eiber).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEVADA - Damage heavy to trees in Caliente, Lincoln County. (Zoller). Damage heavy in Fallon, Churchill County. Damage light to medium at Topaz Lake, Douglas County. (Nev. Coop. Rpt.). KENTUCKY - Completely defoliated elm trees in Knott and parts of Jackson Counties. (Barnett).

AN EURYTOMID WASP (Eudecatoma marylandica - PENNSYLVANIA - Sixteen adults emerged from gouty oak gall caused by Callirhytis punctata (a cynipid wasp) collected in January from oak (laboratory rearing) near Auburn, Schuylkill County. Determined by B.D. Burks. This is a new State record. (Kim).

A CONIFER SAWFLY (Neodiprion sp.) OKLAHOMA - Second-generation pupation nearly complete in area; caused heavy defoliation to shortleaf pine in some areas. Latimer County, including Robbers Cave State Park, again had heavy widespread infestations. Smaller spots reported in southern Latimer County, Snow, Albion, and Antlers areas of Pushmataha County, Daisy area of Atoka County, and

Halleyville and Hartshorne area of Pittsburg County (EC). Many spots larger and more heavily damaged by this generation than by first. (Okla. Coop. Sur.).

WALKINGSTICK (Diapheromera femorata) - OKLAHOMA - All stages caused heavy defoliation of oaks (mainly black) in scattered areas of southern LeFlore County Largest area (3 or 4 square miles) 5 miles south of Big Cedar, but 4 other smaller areas found on State Highway 1 between U.S. 271 and U.S. 259. Defoliation up to 100 percent. (Okla. Coop. Sur.).

EASTERN SPRUCE GALL APHID (Adelges abietis) - WEST VIRGINIA - Infestation fifty percent on 12 acre block of Norway spruce in Wetzel County, August 12. (W. Va. Ins. Sur.).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 10 cases reported in U.S. August 15-21 as follows: TEXAS - Kinney 1, Val Verde 1, Starr 1, Bowie 2, Lampasas 1; ARKANSAS - Little River 4. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - IDAHO - Ranged from 100 to 300 per animal on beef and dairy cattle herds in St. Anthony and Ashton, Fremont County, August 10. (Peebles, Sutherland). TEXAS - Heavy on cattle in Trans-Pecos area. Ranged 300-1,500 flies per animal from most counties. Populations generally increased in most panhandle counties receiving recent rains. Populations increasing rapidly in south-central area. (Neeb et al.). IOWA - Ranged 25-250 (averaged 112) per side on untreated herd in Dallas County August 17. (Iowa Ins. Sur.).

MOSQUITOES - MINNESOTA - Light trap collections for week ending August 13 more than doubled. Aedes vexans accounted for 89 percent of 12,491 females taken. Apparently adults blown in; no larvae of A. vexans in water to account for large numbers. Of 230 larval collection, 135 were from tree holes. To date over 400 water-containing tree holes found producing A. triseriatus. Eight breeding sites of Culex tarsalis found. (Minn. Pest Rpt.).OHIO - Five mosquito traps in Franklin County on nights of August 9, 10, and 12 averaged 14.9 (range 1-42) females per trap per night. Species totals as follows: Aedes vexans 78, Anopheles punctipennis 100, Culex spp. 36, C. restuans 9. (Ohio Dept. of Health).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Moderate to severe on cattle in Adams, Columbia, Rock, Calumet, Sauk, Juneau, Kewaunee, and Dane Counties. (Wis. Ins. Sur.). OKLAHOMA - Moderate to heavy on feedlot cattle checked in Cimarron County.

FACE FLY (Musca autumnalis) - MISSISSIPPI - Average of 5 per head on cattle in 2 herds in Monroe County. (Robinson). MARYLAND - Adults averaged 61 per head on 51 head of untreated Holsteins in Frederick County. (U. of Md. Ent. Dept.). WISCONSIN - Severe annoyance to cattle in parts of Columbia, Sauk, Iron and Juneau Counties. Elsewhere, light to moderate. (Wis. Ins. Sur.). IOWA - Ranged 10-30 (averaged 19) per face on untreated cattle on pasture in Dallas County August 17. (Iowa Ins. Sur.).

AMERICAN DOG TICK (Dermacentor variabilis) - ALABAMA - Numerous specimens taken from cow with fever at Marion, Perry County. Collected by M.I. Crawford. (McQueen).

BENEFICIAL INSECTS

A BRACONID (Lysiphlebus testaceipes) - COLORADO - Beginning to build up in sorghum where Schizaphis graminum (greenbug) populations heavy (Schweissing).

OKLAHOMA - Parasitized about 15 percent of greenbugs on sorghum checked in Cimarron County. (Okla. Coop. Sur.).

A EULOPHID WASP (Tetrastichus incertus) - OHIO - Specimens recovered from Guernsey and Coshocton Counties on August 6. These are new county records. (Flessel).

BIG EYED BUGS (Geocoris spp.) - WASHINGTON - G. pallens and G. bullatus up to 12-15 per sweep in alfalfa seed fields with selective insecticide program in Lowden and Touchet area, Walla Walla County. (Johansen).

A LADY BEETLE (Stethorus sp.) - COLORADO - Numerous in many cornfields heavily infested with Oligonychus pratensis (Banks grass mite) in Arkansas Valley. (Schweissing).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - Observations in infested areas near Blaine, Whatcom County, show late population development. Very little pupation and no adult flights observed. (Rosander).

GIANT AFRICAN SNAIL (Achatina fulica) - FLORIDA - One 3-inch and one 5-inch snail taken in North Miami, Dade County, outside regulated area August 18 by Spencer. Confirmed by R.J. Rybak. Initial survey of newly discovered infested area resulted in finding 350 snails and 1,000 eggs within 2 infested blocks, but no snails in surrounding blocks. Infestation centered around residence at 1931 N.W. 88th Terrace August 19. (Fla. Coop. Sur.). "New" infestation located 30 blocks south and 15 blocks west of regulated area of North Miami. (Mead).

GYPSY MOTH (Porthetria dispar) - VERMONT - Male flight continues in Chittenden and Addison Counties. (Nielsen). NEW YORK - Adult trapped at Manchester, Ontario County; at Big Flats, Chemung County; at Constantia, Oswego County; at Dix, Schuyler County; at Hornby, Steuben County; and at Mt. Morris, Livingston County. These are first collections. Adults (3) collected at Penfield, Monroe County and 2 adults collected at Seneca Falls, Seneca County. Monroe and Seneca are new county records. VIRGINIA - Adults trapped in Independent City of Virginia Beach; at Lynchburg, Campbell County; and at Marion, Smyth County. These are first collections. NORTH CAROLINA - Single male trapped in West Henderson, Vance County for first time. Determinations by E.L. Todd. (PPD).

JAPANESE BEETLE (Popillia japonica) - KENTUCKY - Adults trapped at Campton, Wolfe County; in Magoffin County; at Liberty, Morgan County; at Booneville, Owsley County; and at South Jackson, Breathitt County. These are first collections. Determinations by R.D. Gordon. (PPD).

MORMON CRICKET (Anabrus simplex) - UTAH - During period ending August 12, damage moderate on 450 acres of wheatgrass and sage in Juab County. No migration observed (Judd). MONTANA - Counts of 3 per square yard in alfalfa field in Flathead Indian Reservation west of Polson, Lake County. (Forsyth).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Sterile moths released August 19-25 by county: Tulare 14,000 and Kern 5,349,000. Total for 1971 season to date 61,322,750. (PPD). ARIZONA - Currently under control. Small field found with up to 30 percent infestation, Graham County. (Ariz. Coop. Sur.). NEW MEXICO - During past 14 days 9 adults found in 10 hexalure traps at Carlsbad, Eddy County. (Mathews). Boll examination in extreme southern Dona Ana County revealed one larva. (N.M. Coop. Rpt.).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Infestation on Klamath River and Highway 99 received eradication treatment in Siskiyou County. Results of 2 intensive surveys negative outside of core area. (Cal. Coop. Rpt.).

WHITEFRINGED BEETLES (*Graphognathus spp.*) - ALABAMA - Adults leaf feeding on peanuts and other plants throughout Henry, Houston, Geneva, and other counties. Ranged 1-5 per 3 row feet in one soybean field in Geneva County. Foliage damage to peanuts serious on 2 farms in Western Coffee County and several fields in Houston County; controls applied. (Stephenson et al.).

HAWAII INSECT REPORT

General Vegetables - LEAF MINER FLIES (*Liriomyza* spp.) mines heavy in small planting of snap beans at Pearl City, Oahu. Mines moderate in 60 percent of leaves in 1,000 square foot of green onions at Koko Head; light in 25 percent of leaves in similar host in adjacent planting. (Au, Kawamura). Larvae of CABBAGE WEBWORM (*Hellula rogatalis*) trace in 5,000 square foot planting of daikon (*Raphanus sativus longipinnatus*); moderate to heavy 65-80 percent of plants infested in small plantings of kai choi (*Brassica juncea*) at Koko Head, Oahu. SOUTHERN GREEN STINK BUG (*Nezara viridula*) nymphs and adults light in small backyard planting of long beans at Ewa, Oahu; 20 percent of adults bore eggs of *Trichopoda pennipes* (a tachina fly). (Kumashiro et al.).

Forest and Shade Trees - Larval populations of a MONKEYPOD KIAWE CATERPILLAR (*Melipotis indomita*) and MONKEYPOD MOTH (*Polydesma umbricola*): On Oahu, appear to be declining and most monkeypod trees apparently recovered from earlier attack. *Melipotis indomita* moderate under bark of few monkeypod trees, with denuded canopies at Kapiolani Park. LIGHT BROWN APPLE MOTH (*Epiphyas postvittana*): larvae light in 200+ acres of Pinus spp. at Polipoli, Maui; feeding apparently causing sporadic dieback of *P. taeda* terminals. A EURASIAN PINE APHID (*Pineus pini*): Moderate on *Pinus* plants at Pulehu, Wailuku, Kahului, and Makawao, Maui; *Pinus* spp. in forests in these areas remain uninfested. (Miyahira).

General Pests - All stages of a LEAFHOPPER (*Opsius stactogalus*) heavy in 200 foot hedge of *Tamarix aphylla* at Eleele, Kauai; caused severe russeting of foliage. (Sugawa).

Beneficial Insects - Percentage internodes of *Tribulus terrestris* and *T. cistoides* found to be infested or damaged by a PUNCTUREVINE STEM WEEVIL (*Microlarinus lypriformis*): 82 at Puunene and Maalaea (239 internodes examined); 84 at Lahaina, Kihei, and Waikapu, Maui, (183 internodes examined) respectively. (Miyahira). MELASTOMA BORER (*Selca brunella*) infested 39 percent of fruits, 16 percent of terminals of Indian rhododendron (*Melastoma malabathricum*) at various areas on Hawaii. (Yoshioka). AN ENCYRTID WASP (*Aphycus mexicanus*) emerged from *Ceroplastes cirripediformis* (barnacle scale) infesting fiddlewood (*Citharexylum spinosum*) at Hawaii Kai, Oahu. About 85 percent determined this species; 15 percent *Coccidoxenus mexicanus*. (Kawamura).

LIGHT TRAP COLLECTIONS

BL = blacklight; I = incandescent; M = mercury vapor; O = other

	Temperature °F	Precipitation (inches)	Type of trap	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, [illegible] fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	[illegible]	[illegible]	[illegible] ornithogalli (yellow-striped armyworm)	Trichoplusia ni (cabbage looper)
FLORIDA																							
Gainesville 8/13-19			BL	1	5			6		56						17			4	5	5	7	2
IOWA																							
Kanawha 8/12-15			BL	4			3										7417	1					
Napier 8/9-16			BL	17			59										4828		4				
KANSAS																							
Great Bend 8/5-19			BL	3			82			41					11			1	16		7	13	
Tribune 8/7, 10, 13, 17			BL	3			28			1									2			1	
MINNESOTA																							
Crookston 8/10-16			BL																11				
Fergus Falls 8/10-16			BL																6				
MISSISSIPPI																							
Stoneville 8/13-19	66-90		2BL	31	8			4	3	642					1			1	25		47	145	689
MISSOURI (County)																							
Pemiscot 8/13-19			BL	18				1		193							693		17		38	34	
NEBRASKA																							
Aurora 8/5-12			BL	19			44	125		25							7564	65	13		5	39	
Plymouth 8/5-12			BL	31			34	45		65						5	8753	54	61			13	
NEW JERSEY																							
Plainsboro 8/11-17			BL	22						4					5		168	2	68		32	8	76
Seabrook 8/11-17			BL	28											20		22	10	70		8	36	44
NORTH DAKOTA																							
Bottineau 8/9, 10			BL											5					8				
Fargo 8/15, 16			BL											7									
OHIO																							
Reynoldsburg 8/13-19			BL	2													18	3			2		
Wooster 8/13-20			BL	19			35								1		523	18	40				1
SOUTH DAKOTA																							
Brookings 8/9-15			BL	4			33										308		122				
TENNESSEE																							
Cumberland 8/16-20			BL	3						9					3	10		1	21			20	
Fentress 8/16-20			BL	9						4					8	6		2	31			15	3
TEXAS																							
Waco 8/13-19	72-90	0.05	BL	2	3			56		152								5		68	29	40	712
WISCONSIN																							
Cedar Grove 8/10-16			BL	10						1							106	29	43		1		
De Forest 8/10-16			BL							1							174		1				

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Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 September 3, 1971 Number 36

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM moths increased on Eastern Shore of Maryland. Larvae damaged corn in Kentucky. Building up in South Carolina; economic on soybeans. Moths heavy in Arkansas. (p. 629).

FALL ARMYWORM damaged sorghum in Oklahoma. (p. 630).

BOLLWORMS heavy on cotton in west Tennessee. Major problem in Avra Valley of Arizona. Moths increased in delta counties of Mississippi. (pp. 631-632).

BOLL WEEVIL damaged cotton in Oklahoma. Increased in west Tennessee. Heavy in south and central Alabama. (p. 632).

CABBAGE LOOPER outbreak on cotton in Cochise County, Arizona. (p. 632).

Detection

TOBACCO FLEA BEETLE reported for the first time in South Dakota for a new State record. (p. 632).

For new county records see page 633.

Special Reports

Distribution of Purplebacked Cabbageworm. Map. (p. 638).

Bibliography on Imported Fire Ant (pp. 639-652).

Reports in this issue are for week ending August 27 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 30

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Temperatures averaged near normal over most of the Nation. Tropical Storm Doria, drenched the Atlantic coast late in the week.

PRECIPITATION: Lines of thunderstorms marched across the Great Lake region to New England early in the week. In the Chicago, Illinois, area some of the thunderstorms were accompanied by strong winds, hail, and heavy showers. A tornado near Naperville about 30 miles west of Chicago destroyed 2 residences. Winds at Lake Forest, northwest of Chicago gusted to 60 m.p.h. and hail up to 0.75 inch in diameter accompanied strong winds. Other thunderstorms dotted the southwest central Rocky Mountains and Gulf States. Over 2 inches of rain fell in spots north of Abiliene, Texas, and some localities near the Gulf of Mexico from Texas to Florida, received over 1 inch of rain late Tuesday and early Wednesday. Tropical Storm Doria, moved northward along the Atlantic coast late in the week, soaking most areas with 4 to more than 6 inches of rain. Trenton, New Jersey, received 6.05 inches Friday. The weekly total at Trenton was 8.09 inches. Winds associated with Tropical Storm Doria were generally about 60 m.p.h., but gusts occasionally approached hurricane speed. Philadelphia, Pennsylvania, recorded 74 m.p.h. gusts and Bridgeport, Connecticut, 75 m.p.h. gusts. Doria lost much of her energy as she moved across New England Saturday. Flooding and wind damage were widespread but pleasant weather returned to most of Northeast by Sunday. A new tropical depression moved westward across the Florida Peninsula Sunday night. This depression is about 100 miles west of Tampa.

Weather of the week continued on page 636.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - NORTH DAKOTA - Larvae averaged 1 per square foot in storm damaged oatfield near Des Lacas in Ward County. About 90 percent of leaves stripped in regrowth oats in late milk stage. (Brandvik).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Ranged 3-4 per head of sorghum in Caddo County. Moderate to heavy in late sorghum in Cotton, Tillman, and Okmulgee Counties. (Okla. Coop. Sur.). NEBRASKA - Ranged 0-12 (averaged 4) per 25 ears in 8 cornfields in Hamilton, Merrick, Nance, and Howard Counties. (Berogan). MICHIGAN - Limited adult collections on August 21, 22 at Lenawee blacklight station. Growers can expect larval problems soon, especially when fresh silk exposed. Expect increase until killing frost. Late crops should be watched. (Laughlin). DELAWARE - Adults 32 per night in blacklight traps in Sussex County, and larvae averaged 2 per ear in untreated sweet corn. (Burbutis, Lesiewicz). MARYLAND - Moths increasing in light traps on Eastern Shore. Ear infestation ranged 14-26 percent in processing corn in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Subeconomic in most sorghum in Dinwiddie, Sussex, Greenville, Isle of Wight, and Nansemond Counties. Larvae very light in Greenville, Sussex, Southampton, Isle of Wight, and Nansemond Counties peanuts. Larvae subeconomic on soybeans in Nansemond, Sussex, Southampton, Isle of Wight, and Prince George Counties. (Allen). KENTUCKY - Larvae damaged corn in Logan County. Feeding in whorls and ears. Larvae averaged 4.5 per 10 plants. (Barnett). SOUTH CAROLINA - Building up in most counties, especially those in middle and southern areas. Economic populations on soybeans reached in many areas. Heavy on unprotected sweet corn statewide. (Thomas). TENNESSEE - Surveys in west area soybeans negative; pod development in most fields almost to stage where beans become very attractive to egg laying and to stage where pods will support damaging population. Counts continue heavy in blacklight traps in west areas and increase expected for next generation. (Gordon). ARKANSAS - Gradually increasing in soybeans. Currently moth flights heavy; expect larval increase in soybeans. With good moisture in most areas, cotton will not "cutout" as rapidly. This should keep moths divided between 2 crops. In Lonoke and Prairie Counties, larvae 10 per 30 row feet. In Desha County, heaviest count 62 per 30 row feet. Infestations in only a small percentage of fields. (Boyer).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Still heavy on late sorghum in Cotton and Tillman Counties. (Okla. Coop. Sur.). MAINE - Generally light. Adult and larvae of several species of lady beetles present and up to 1 larva per 5 plants. Last week populations of R. maidis very heavy in one field. Same field this period showed sharp decrease in populations with 25 percent of those on plants parasitized and many infested by fungus. (Gall).

HORNWORMS (Manduca spp.) - TENNESSEE - Larvae 3 per 10 stalks, indicates some damage expected even though larvae small (second or third instar) and harvesting of tobacco noted in Franklin County. (Cagle). OHIO - M. sexta (tobacco hornworm) in Adams County, averaged 0.15 per tobacco plant. Individual field averages as high as 0.45 per plant. Up to 45 percent of plants sampled showed damage. Ten to 25 percent of individual leaves eaten. (Andress). ARIZONA - M. sexta larvae damaging chili peppers in few fields at McNeal, Cochise County. (Ariz. Coop. Sur.).

GREENBUG (Schizaphis graminum) - TEXAS - Light in Trans-Pecos area, less than 50 per plant in most fields. Populations in High Plains reduced by beneficial insects. Damaging infestations not reported in Amarillo area, Potter County. (Neeb, Clymer). ARKANSAS - Specimens collected in Randolph County, August 16. This is a new county record. Moderate, 0-500 per plant in Washington County. (Boyer).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Light to moderate, 18-120 per 10 sweeps of alfalfa in southwest area. (Munson). MARYLAND - Averaged 50 per sweep in 15 acres of alfalfa in Queen Annes County. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - First to fourth instar larvae averaged 11.1 per corn plant in 8 fields in Hamilton, Merrick, Nance, and Howard Counties. Egg masses averaged less than 1 per 5 plants. (Berogan). WISCONSIN - Moth catches heavy until night of August 22, and cool weather reduced activity. Egg counts below 10 per 100 plants in most sweet corn. Second-generation larvae light in southwestern sweet corn. (Wis. Ins. Sur.). INDIANA - Counts of first-generation larvae indicate infestations 1.5 times as great in 1971 as in 1970, statewide. (Huber). MICHIGAN - Blacklight collections 100+ at Lenawee, Monroe, Montcalm, and Ottawa County stations. Egg laying and larval activity continues. Controls necessary on susceptible crops until frost. (Laughlin). OHIO - Second-generation larvae in bases of midribs of field corn in southern areas. (Andress). DELAWARE - Adults 128 per night in blacklight trap at Bridgeville, Sussex County. Infestations in untreated sweet peppers averaged 22 percent with 5 fresh egg masses per 10 plants on August 26 at Bridgeville. (Burbutis, Lesiewicz). MARYLAND - Larval infestations ranged 20-84 percent in corn in late silk stage in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Numerous moths emerged in Nansemond County area during past few weeks. Watch sorghum crop. (Roberts, Allen). MISSISSIPPI - Third-generation egg laying underway in Marshall County. Populations in corn moderate to heavy. (Davis).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Moderate to heavy in Trans-Pecos area; larvae 1-2 per sorghum plant whorl. This species and Heliothis zea (corn earworm) still present in High Plains area. Most infestations ranged light to medium. (Neeb, Clymer). OKLAHOMA - Reported damaging sorghum heads in Jackson, Kiowa, and Washita Counties. Moderate to heavy in late sorghum in Okmulgee County and continues heavy in late corn in Tillman County. (Okla. Coop. Sur.). TENNESSEE - Damaging late corn and milo in Coffee County. (Williams). MARYLAND - Increased. Watch late-planted field corn statewide. (U. Md., Ent. Dept.).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - SOUTH DAKOTA - Larvae collected for first time near Oral, Fall River County, August 12, 1971. Determined by G.P. Sutter. Second and third instar larvae taken in association with corn cobs in ditch-irrigated corn. In 200-acre field on August 18, 5-8 percent of plants surveyed showed 1-3 second to fourth instar larvae. Previous to these collections only moths recovered in State. (Jones).

SORGHUM WEBWORM (Celama sorghiella) - TENNESSEE - Counts of 4-5 per head in sorghum in Tipton County. Sorghum in dough stage and some damage expected. (H.D. Gordon).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - COLORADO - Adults light to moderate in Montrose, Delta, Mesa, and Garfield Counties. Heavy in fields and some controls applied. (Bulla). UTAH - Damage severe to 30 acres of corn in Box Elder County (Knowlton, Lindsey); also damaged corn in portions of Cache County. (Knowlton, Burningham).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - TENNESSEE - Abundant on corn in Coffee County for a new county record. No damage reported. Continues to damage corn in Morgan County. (Williams).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Very heavy in late sorghum in Wagoner County field. Destroyed 99 percent of grain in some heads. (Okla. Coop. Sur.).

SPIDER MITES - UTAH - Unspecified species discoloring corn foliage in Weber County (Boyer); treated 4,532 acres of corn in Utah County as of August 20 (Horne); much control applied in Sevier County. (Roberts).

TURF, PASTURES, RANGELAND

CHINCH BUG (Blissus leucopterus leucopterus) - SOUTH CAROLINA - Heavy and some lawn damage in Clemson area, Pickens County. (Miller). MAINE - Reports of lawn injury continue; invading homes in southern and central areas. (Gall).

TWOLINED SPITTLEBUG (Prosapia bicincta) - SOUTH CAROLINA - Unusually heavy, 287 spittle masses per square yard on lawns in 6 city-block-area of Myrtle Beach, Horry County. (McKee).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae damaged Coastal Bermuda grass in Geneva County field. (Reynolds).

A NOCTUID MOTH (Agrotis ducens) - NEW HAMPSHIRE - Moths 30 in blacklight trap at Newington, Rockingham County. (Schaefer).

FORAGE LEGUMES

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - NEVADA - All larval instars averaged 1 per sweep of alfalfa in Stillwater area, Churchill County. (Hilbig).

PEA APHID (Acyrthosiphon pisum) - UTAH - Required controls in some Wayne County alfalfa fields, moderate in Piute County. (Chapman).

ALFALFA WEEVIL (Hypera postica) - UTAH - Adults numerous; some larval damage in Wayne and Piute Counties. (Chapman).

A LYGUS BUG (Lygus hesperus) - NEVADA - Adults ranged 35-60 per sweep in 450 acres of alfalfa in Humboldt County. (Stitt).

ALFALFA SEED CHALCID (Bruchophagus roddi) - TEXAS - Moderate to heavy in alfalfa seed fields in Ward and Pecos Counties. (Neeb).

LEAFMINER FLIES - VERMONT - Unspecified species prevalent in alfalfa. Spread and increase in numbers occurred in last few years. Despite apparent off color and injury, insect does not affect yield or quality. (Nielsen).

SOYBEANS

VELETBEAN CATERPILLAR (Anticaria gemmatalis) - SOUTH CAROLINA - Larvae 3 per square yard, caused 5 percent foliar loss to 6 acres of soybeans in Marion County. Similar damage noted in other fields where specimens could not be found. (Pate).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Light in counties near Stephenville. Populations which exceed economic thresholds found in irrigated fields near De Leon and in dryland field near Gorman. Infestations needing insecticidal treatment also reported in Hill County. Medium in Motley County. (Hoelscher, Pallmeyer).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averaged 3 per linear foot of peanuts in Love County. Some fields sprayed. (Okla. Coop. Sur.).

COTTON

BOLLWORMS (Heliothis spp.) - ARIZONA - H. zea major problem in Avra Valley, Pima County. (Ariz. Coop. Sur.). OKLAHOMA - Damage averaged 5 percent in treated cotton and 30 percent in untreated cotton in Grady County. Damage ranged 5-15 percent in fields in Marshall, Stephens, Jefferson, and Tillman Counties. Moderate in Washita and Bryan Counties. (Okla. Coop. Sur.). LOUISIANA - In Madison Parish, infestations ranged 1-3 (averaged 1.3) percent in 75 of 122 plots, larvae found in 25 plots. Damaged bolls in 75 of 119 plots. Moth flights increased; expect problems in September. In light trap, collected 363 H. zea and 6 H. virescens. (Cleveland et al.). MISSISSIPPI - In delta counties, H. zea moth collections increased in light traps. Heavier than in corresponding week past 2 years. Eggs still abundant in attractive fields. Damaged squares averaged 1.45 (maximum 9) percent in 16 of 21 fields. (Pfrimmer et al.). TENNESSEE - Continues very serious threat throughout cotton-growing area. Infestations very heavy. All stages of larvae found in late cotton. As high as 75 larvae or eggs per 100 terminals in one field in Hardeman County. Control in order in most late cotton. Appears to be worst year for larval damage since survey started in 1950. (Locke). ALABAMA - Moth flights continue heavy in south and central areas and increased in north areas. Egg laying heavy, 5-100 per 100 stalks in many south and central fields. (McQueen). SOUTH CAROLINA - In Florence County, remains lighter than 1970. Collected 644 H. zea and 2 H. virescens in light trap this period. (Taft et al.).

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Very heavy near overwintering areas in Washita, Caddo, Kiowa, and Greer Counties. Some fields treated 6 times and still show heavy damage, as much as 100 percent. Ranged 2-50 percent in Tillman County with higher counts in untreated fields. Ranged 10-15 percent in Stephens and Jefferson Counties, 10-25 percent in Marshall County, and 5-10 percent in Love County. Heavy in Bryan County and moderate in Garvin and Cleveland Counties. (Okla. Coop. Sur.). LOUISIANA - In Madison Parish, no weevils recovered from sticky traps. Punctured squares ranged 2-60 (averaged 23) percent in 122 plots. (Cleveland et al.). MISSISSIPPI - Still threat to cotton throughout State. In delta counties, infestations spotty; control underway in most areas. (Robinson). In delta counties, punctured squares averaged 12.4 (maximum 65) percent in 16 of 21 fields. Third-generation weevils emerging. No weevils recovered in pheromone-baited wing traps. (Pfrimmer et al.). TENNESSEE - Continues to increase in west areas with another "hatchout" occurring. Damaging infestations present throughout cotton-growing area. Infestations of 60-80 percent punctured squares in some of northern counties common. Small boll damage in late cotton considered heavy. Control difficult due to rank cotton and heavy migration. Eight weevils observed in one bloom in Hardeman County. (Locke). ALABAMA - Adults heavy throughout south and central areas and Tennessee River Valley area. Controls general and effective. "Hatchouts" continuous and overlapping. Weather conditions continue favorable for weevil development. (McQueen). SOUTH CAROLINA - In Florence County, infestations increasing; migrations decreasing. (Taft et al.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Outbreaks requiring controls at McNeal and San Simon, Cochise County. (Ariz. Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Problem in some fields at San Simon, Cochise County. (Ariz. Coop. Sur.).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Light to moderate in cotton in Okmulgee County. First report of year. (Okla. Coop. Sur.).

WHITEFLIES - TENNESSEE - Undetermined species heavier than usual. Some damage observed in one field in Fayette County. First year observed heavy enough to cause damage in this area. (Locke).

SUGAR BEETS

GARDEN SYMPHYLAN (Scutigerella immaculata) - UTAH - Reinfested and damaged sugar beets in 32-acre field in Farr West area of Weber County. (Dorst).

POTATOES, TOMATOES, PEPPERS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - SOUTH DAKOTA - Specimens collected at Forestburg, Sanborn County, by H.C. Severin on June 23, 1944. Determined by E.U. Balsbaugh. This is a new State record. New county records include: Caly (1946), Gregory (1950), Roberts (1952), Brookings (1958), and Yankton (1959). (Jones).

VARIEGATED CUTWORM (Peridroma saucia) - OHIO - Larvae ranged 10-15 per tomato plant; damaged fruit on 30-acre field in Sandusky County. (Sleesman).

A WHITEFLY (Aleyrodes spiraeoides) - CALIFORNIA - Counts of 8 per leaf of bell pepper plants in 60-acre field at Selma, Fresno County. (Cal. Coop. Rpt.).

BEANS AND PEAS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Damage economic to 25-30 percent of commercial acreage of southern peas near De Funiak Springs, Walton County (Thomaston). No controls expected due to lack of effectiveness at this late date. (Brogdon).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Additional blacklight collections at most stations indicate chemical controls from now to end of season vital for marketable crop. (Laughlin).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Stunted asparagus brush noted near Clarksboro, Gloucester County, injury heavier near edge of field near woods. Heavy near Hurffville. (Ins.-Dis. Newsltr.).

DETECTION

New State Record - TOBACCO FLEA BEETLE (Epitrix hirtipennis) SOUTH DAKOTA - Sanborn County. (p. 632).

New County Records - GREENBUG (Schizaphis graminum) ARKANSAS - Randolph (p. 629). GYPSY MOTH (Porthetria dispar) PENNSYLVANIA - Franklin (p. 635). JAPANESE BEETLE (Popillia japonica) TENNESSEE - Weakley (p. 635). NORTHERN CORN ROOTWORM (Diabrotica longicornis) TENNESSEE - Coffee (p. 630). TOBACCO FLEA BEETLE (Epitrix hirtipennis) SOUTH DAKOTA - Caly, Gregory, Roberts, Brookings, Yankton (p. 632).

CORRECTIONS

CEIR 21(28):497 - GRASS BUGS - WASHINGTON ... delete note. (PPD).

CEIR 21(30):529 - APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - "Adults reported in two locations in Lake Minnetonka area and at New Ulm." should read " ... Lake Minnetonka area and at Sleepy Eye." No flies reported at New Ulm as of July 22. (Minn. Ins. Rpt.).

CEIR 21(35):616 - SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MARYLAND - ... should read SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ALABAMA (PPD).

DECIDUOUS FRUITS AND NUTS

WALNUT HUSK FLY (*Rhagoletis completa*) - OREGON - Now established in western Washington County. To date total of 39 adults recovered in Frick traps located in Scholls and Hazeldale areas. First adults trapped at these sites on August 9. (Anderson, Penrose).

FOREST AND SHADE TREES

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEBRASKA - One of heaviest second generations statewide on record. (Keith).

VARIABLE OAK LEAF CATERPILLAR (*Heterocampa manteo*) - NORTH DAKOTA - Defoliation heavy in Fort Totten area of Benson County. Several areas of basswood, oak, and elm trees 100 percent defoliated. Larvae ranged 0.5-1.5 inches long with most larvae nearly full grown. In Killdeer Mountain area in Dunn County, defoliation not as severe. Birch and buroak defoliated in this area. Paper birch trees severely defoliated in 1970 did not leaf out completely in 1971. (Brandvik).

LOCUST LEAF MINER (*Xenochalepus dorsalis*) - KENTUCKY - Infestation as high as 90 percent in Barren, Hardin, Nelson and Warren Counties locust. (Barnett).

MAN AND ANIMALS

HORN FLY (*Haematobia irritans*) - OHIO - Averaged 194 on backs of beef cattle in Noble County. (Pratt). NEBRASKA - Averaged 500 per head on untreated range cattle pastured near North Platte in Lincoln County. (Campbell). COLORADO - Increasing on range cattle in eastern areas; up to 800 per animal noted. (Hantsbarger). OKLAHOMA - Ranged 300-350 per head on cattle in Payne County and 300-500 in Marshall County. Heavy in Garvin and Garfield Counties and moderate in Craig and Cleveland Counties. (Okla. Coop. Sur.). TEXAS - Heavy on cattle in Trans-Pecos area. Heavy on cattle in Throckmorton, Stephens and Wilbarger Counties. (Neeb, Boring).
STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Moderate in most counties. Severe annoyance to cattle reported in Sauk and Calumet Counties. (Wis. Ins. Sur.). NEBRASKA - Averaged 20 per leg on untreated feed lot animals near North Platte, Lincoln County. (Campbell).

MOSQUITOES - MINNESOTA - Light trap catch of females for week ending August 20 totaled 6,660, little more than 50 percent number taken week before. *Aedes vexans* accounted for 85 percent of catch. *A. vexans* dominant in larval and bite collections. Heavy rains which occurred August 18 in northern half of district resulted in high population densities of larvae, especially in run-off areas such as roadside ditches. Some increase in mosquito numbers in district may occur, especially if winds from north. (Minn. Pest Rpt.).

FACE FLY (*Musca autumnalis*) OHIO - Adults averaged 23.2 per head observed on beef cattle in Noble County. (Pratt). WISCONSIN - Very heavy numbers annoying cattle in portions of Sauk, Bayfield, Iron, Adams, and Chippewa Counties. Reports indicate numbers low in other counties. (Wis. Ins. Sur.). NORTH DAKOTA - Flies 20 per face noted on range cattle in Dunn County. Economic infestations not widespread this season. (Brandvik). NEBRASKA - Ranged 15-20 per head on range cattle near North Platte, Lincoln County. Treatment has had little effect in most cases. (Campbell).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - ALABAMA - Total of 43 collected from home at Ragland in St. Clair County. (Weaver).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - MINNESOTA - Adults light in the northwest district. Highest count 10 per square yard. In south-central district, one small alfalfa field near woods had estimated 90 per square yard. One area in Freeborn County, 45-55 per square yard in field margin. In west-central district, populations generally low. In east-central and central districts economic, ranged 12-25 per square yard. Economic in Anoka, Sherburne, Stearns, Todd, and Kanidyohi Counties. (Minn. Pest Rpt.). COLORADO - About 900,000 acres of private, State, and Forest Service rangeland infested in southeastern areas. (Watson). NEVADA - Adults of *Melanoplus sanguinipes* and *M. bivittatus* range 5-8 per square yard in alfalfa near Battle Mountain, Lander County. (Martinelli, Rowe). NORTH DAKOTA - Adult survey completed with scattered infestations (2 rating) in parts of McLean, Sheridan, Ward, McHenry, Pierce, Bottineau, Benson, Pembina, Grand Forks, and Walsh Counties. Infestations mainly in alfalfa and weedy roadsides. *Melanoplus bivittatus*, *M. sanguinipes* and *M. femurrubrum* dominant. (Brandvik, Grasser).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Single male moths trapped in Blair, Crawford, Elk, Cameron, Clinton, and Warren Counties for the first time. Four moths trapped in Franklin County for a new county record. VIRGINIA - Single male moths trapped in Roanoke and Mecklenberg Counties. (PPD).

JAPANESE BEETLE (*Popillia japonica*) - OHIO - Adult beetles reported from Auglaize County. (Ohio Dept. of Agr.). INDIANA - Adults taken in pheromone traps in Steuben, Parke, and Sullivan Counties. (Favinger). TENNESSEE - Trapped 10 adults at Greenfield, Weakley County. Earlier one adult trapped, but not considered an infestation. Undetermined area of Greenfield now considered infested. This is a new county record. One adult trapped at I-40 rest stop in Dickson County. No infestation known to occur in county. (Gordon).

MORMON CRICKET (*Anabrus simplex*) - MONTANA - Counts of 1 per square yard near Hobson, Judith Basin County, and Forsyth, Rosebud County. (Pratt).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Several hundred acres treated at Safford, Graham County. No buildup pattern observed at Avra Valley, Pima County, as in previous years. Larvae found at Bowie, Cochise County. (Ariz. Coop. Sur.). CALIFORNIA - Boll infestations 50-55 percent in Imperial Valley, Imperial County; 36.8 percent in Coachella Valley, Riverside County; 6.3 percent in Palo Verde Valley under planned insecticide program; 2.0 percent in Needles, San Bernardino County. (Cal. Coop. Rpt.)

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - FLORIDA - Few and scattered (estimated 5 percent infestation) on 840 50-pound bags of Cuban sweetpotatoes (boniata) at Perrine, Dade County August 9. (Knowles). Control requested. (Fla. Coop. Sur.).

HAWAII INSECT REPORT

Turf and Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) adults trace, 1-4 per 10 sweeps, in mixed stand of grass at Kaneohe and Mililani, Oahu. Light trap collections increased as follows: May, 35; June, 62; July, 81. On Maui, adults moderate in 10 acres of Kikuyu grass pasture at Ulupalakua; larvae nil. All stages nil in pastures at Haiku and Waihee. (Au et al.).

Fruits and Nuts - Moderate to heavy damage by larvae of a Noctuid Moth, Phlegetonia delatrix to about 50 percent of leaves on 50+ Java plum (Eugenia cuminii) at Haiku and Wailuku, Maui. At Manoa, Oahu, young leaves on several backyard mountain apple (E. malaccensis) trees heavily damaged. (Ah Sam, Kashiwai).

Ornamentals - Heavy damage by a NARROW WINGED KATYDID (Elimaea punctifera) noted in commercial planting of anthurium flowers cultured under tree fern (Cibotium chamissoi); as many as 80 (average 60) percent of flowers damaged by oviposition or feeding; commercial plantings under saran averaged 5 percent damage at Pahoa, Hawaii. Oviposition noted on leaves of this host plant and citrus leaves in adjoining fields. Leaves, flowers, and young fruits of citrus plants heavily damaged by feeding. (Shigenaga).

Forest and Shade Trees - All stages of an EURASIAN PINE APHID (Pineus pini) heavy on one Pinus sp. bonsai at Makawao, Maui. At Olinda, Kahului, and Wailuku, chemical treatment during past month unsatisfactory. At Monoa, Oahu, infested Pinus spp. noted at about 10 percent of all homes surveyed. Infested plants treated. (Miyahira, Kashiwai). Hundreds of larvae of a MONKEYPOD KIAWE CATERPILLAR (Melipotis indomita) infested single large kiawe (Prosopis pallida) tree at Mt. Tantalus, Oahu; numerous larvae noted under ground cover planting of Wedelia trilobata. On Oahu, light trap catches indicate steady decline of adults as follows: May, 446; June, 208; July, 125. Expect increase in trap collections during next few months; 1970 records show a peak in September. (Rose). A PIT SCALE (Asterolecanium pustulans) moderate to heavy on 2 of 7 Erythrina trees at Waialae, Oahu; as many as 136 scales per 3 inch, pencil-sized branches. About 11 percent of scales parasitized by Metaphycus portoricensis (an encyrtid wasp). (Kawamura).

Weather of the week continued from page 628.

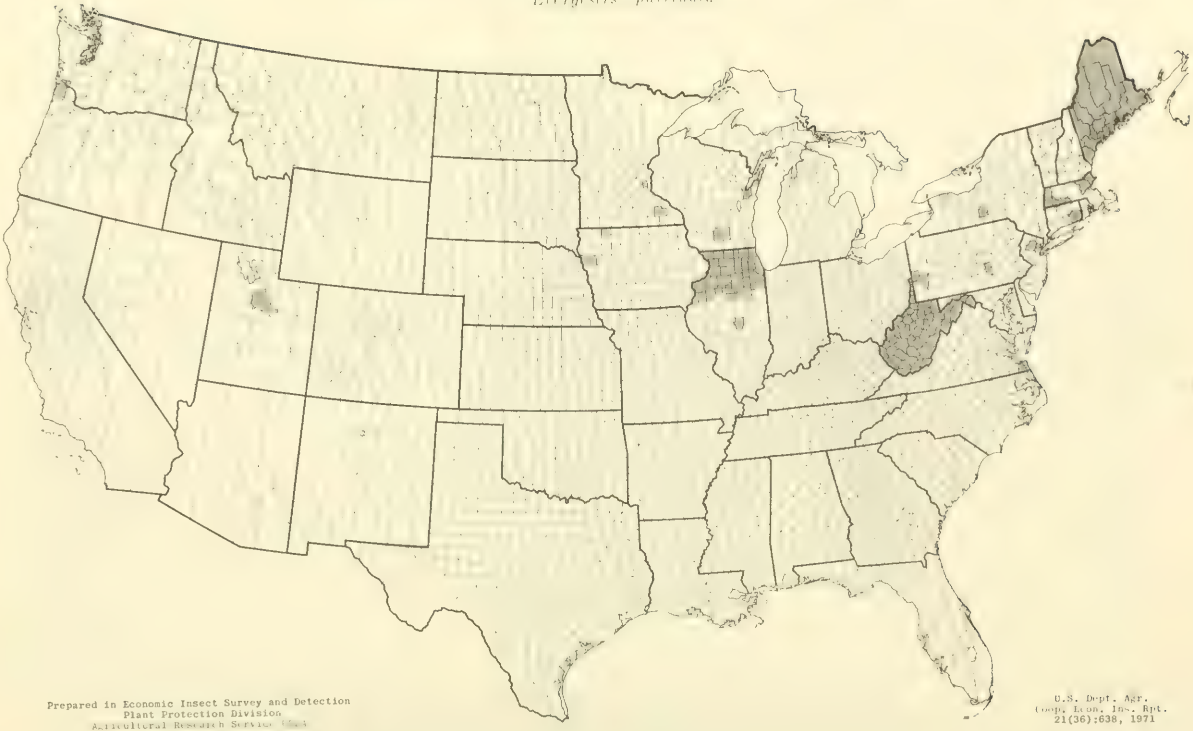
TEMPERATURE: The weekly mean temperatures averaged slightly above normal west of the Rocky Mountains over the western edge of northern and central Great Plains and along the eastern portion of the gulf coast. The high-pressure areas, one over the Pacific Northwest and the other over the Great Lakes spread fair skies and early autumn temperatures from the Pacific coast to New England. Some northern localities were 15-20° cooler Monday morning than 24 hours earlier. The temperature at Marquette, Michigan, was 46° Monday and 64° Sunday. Cool weather did not reach South Dakota until a day later. Numerous stations in South Dakota registered 100° or higher Monday. Pierre recorded 106° Monday. Maximums in South Dakota Tuesday were generally in the 80's and 84° at Pierre. Freezing weather occurred in the high Rockies and at some northern locations. Big Piney, Wyoming, registered 26°, Yellowstone, Montana, 32°, and Pellston, Michigan, 32° Tuesday morning. A warming trend occurred over much of the Nation late in the week. Miles City, Montana, registered 100° and Minot, North Dakota, 101° Saturday afternoon. Maximums over the Northeast held mostly in 60's and low and middle 70's Friday, due to cloudiness and rain associated with Tropical Storm Doria. The Northeast warmed to near or above 80° by Sunday. The maximum exceeded 100° every day in the southwestern deserts, reaching 107° at Imperial, California, Wednesday and Thermal and Blythe Sunday.

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap BL - blacklight I - incandescent MV - mercury vapor O - other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 8/20-26			BL					2	3	25						12					2	8		
MISSISSIPPI																								
Stoneville 8/20-26	69-94	0.12	2BL	44				18	10	6971					1	4			41		38	432	514	
NEBRASKA																								
Aurora 8/12-19			BL	21			99			56						1	4459	34	27		21	189		
North Platte 8/11-18			BL	15			23								1	2	164		39					
NEW JERSEY																								
Plainsboro 8/18-24			BL	103						26					16		116	46	324		43	132	60	
Seabrook 8/18-24			BL	26						29					20		28	6	190		9	32	114	
NORTH DAKOTA																								
Bismarck 10/19, 20, 24			BL									1		20										
Sentinel Butte 8/12			BL									2		1										
OHIO																								
Wooster 8/20-26			BL	54			76			1					1		229	8	18			4	3	
TENNESSEE (County)																								
Dyer 8/23-27			BL	6	3				2	115					1	1	202		4			10	3	
Franklin 8/23-27			BL	30	2				11	130					9	12	81		111			38	1	
TEXAS																								
Waco 8/19-26			BL	10														21	41	153	124	242	3531	
VIRGINIA																								
Holland 8/18-23			BL	2						1301					15		241		38			15		
Warsaw 8/18-25			BL	1						175					1	12	13		7			1		
WISCONSIN																								
Cedar Grove 8/17-23			BL	3						6							735	16	34		20			
De Forest 8/17-23			BL														331	6	8					

Distribution of Purplebacked Cabbageworm

Evergestis pallidata



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Some additional information is available in internal, unpublished reports of the Plant Protection Division.

Prepared by Economic Insect
Survey and Detection Staff

U.S. Dept. Agr.
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ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 September 10, 1971 Number 37

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM increased in soybeans in Arkansas. Larvae damaged sorghum in south Georgia and heavy in limited area of Alabama. (p. 655).

MEXICAN BEAN BEETLE troublesome on soybeans in South Carolina and Maryland. (p. 658).

BOLL WEEVIL punctured squares heavy in Louisiana. Migrating weevils hindered controls in west Tennessee. Still heavy throughout Alabama. BOLLWORMS heavy in Tennessee. Larvae troublesome in Alabama. Increased in Georgia. (p. 659).

COWPEA APHID heavy on beans in limited area of Idaho. (p. 660).

PEARSLUG heavy on cherries in Utah. (p. 661).

Detection

New State records include ASPARAGUS APHID from Maryland (p. 660), AN OLETHREUTID MOTH from California (p. 662), and WESTERN CORN ROOTWORM from Michigan (p. 656).

For new county records see page 664.

Reports in this issue are for week ending September 3 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 6

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Date Service, NOAA.

HIGHLIGHTS: Summer lingered in the North Central and Northeast, but the central Rocky Mountains felt some early autumn chill and saw a few flakes of snow. Moderate rain fell in the Pacific Northwest and nearby thundershowers occurred from the Red River of the North Valley to the Deep South.

PRECIPITATION: Light rain occurred from Washington, Oregon, and northern California, across the northern border States to New England early in the week. Also over the central and southern Rocky Mountains and in the south from eastern Texas to the Carolinas. By midweek, showers and thundershowers had become thinly scattered, but widespread over much of the eastern half of the Nation. Mostly daily totals were small. However, 2.28 inches of rain fell in 6 hours Wednesday afternoon at Vandalia, Illinois. Late in the week a slow moving cold front stretched from the northern Great Plains southwestward across the central Rocky Mountains. Light rain showers occurred along the front, with a few snow flurries at some of the higher locations. As the front reached the Great Plains it set off thunderstorms, some of which were accompained by strong winds and hail. Hobart, Oklahoma, received 4.75 inches of rain in 6 hours Saturday afternoon. A depression off the Louisiana coast spread showers from Texas to Florida, with some totals exceeding 5 inches. A few totals in the Dakotas also exceeded 5 inches. The heaviest weekly total that has come to our attention is 8.67 inches at New Orleans. The driest areas were California and western and central Texas. These areas received no rain or only light widely scattered showers.

TEMPERATURE: Pleasant late summer weather prevailed over most of the Nation early in the week. On Monday afternoon, temperatures reached the 70's over the northern border States, the 80's and 90's in the Central and the South, and 100° or higher in the southwestern deserts. Blythe, California, registered 109° Monday afternoon. Southerly winds on the back side of a large high which lay over the East brought a warming trend to the Great Plains. By Thursday, much of the Dakotas and parts of Nebraska had warmed to 100° or higher, 105° at Pierre, South Dakota, with warmer air, came haziness and increased humidity. The Far Northwest remained cool and comfortable due to storm off the northern Pacific coast. An early autumn cold snap occurred in the high Rockies Friday afternoon, when the warmest temperature at West Yellowstone, Montana, was 39°. Nearby parts of Montana and Wyoming warmed

For continuation of weather of the week and for 30-day forecast, see page 660.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ASTER LEAFHOPPER (Macrosteles fascifrons) - COLORADO - Counts decreased on lettuce. Incidence of aster yellows averages 9 percent in 8 fields in Otero and Pueblo Counties. (Schweissing).

BEET LEAFHOPPER (Circulifer tenellus) - COLORADO - Ranged 0-100 per 100 sweeps of sugar beets in Pueblo, Crowley, Otero, and Prowers Counties. (Schweissing).

CORN EARWORM (Heliothis zea) - UTAH - Infested 60 percent of sweet corn in Iron County (Sjoblom), moderate in Utah County (Horne), and 3-15 percent infested in Juab, Cache, Salt Lake, Tooele, and Davis Counties (Burningham, Knowlton). OKLAHOMA - Ranged 0-3 per head in few fields of grain sorghum in soft dough stage in Grady, Washita, and Caddo Counties. Heavy on sorghum in Cotton County and light in Kay and Noble Counties. Averaged 2 or 3 per 10 sweeps of alfalfa in Caddo and Washita Counties. (Okla. Coop. Sur.). KANSAS - Larvae averaged 0.1 per corn ear in Greeley County field. In Franklin County, averaged 8 percent damage in 3 fields; in Miami County, 10 percent damage in 2 fields, in Johnson County, 5 percent in 4 fields. (Bell). NEBRASKA - Very light, ranged 0-3, averaged less than 1 per 25 ears in 11 cornfields in Loup, Brown, Rock, and Keya Paha Counties. (Berogan). WISCONSIN - Blacklight trap catches continue light. Larvae in field, light or nonexistent in all areas. According to blacklight catches no significant flights occurred and no treatment justified. (Wis. Ins. Sur.).

DELAWARE - Adults averaged 27 per night in blacklight trap collections in Sussex County and increased in Kent County. (Burbutis, Lesiewicz). MARYLAND - Heliothis zea) moth counts averaged 43 per night in Dorchester County and ranged 1-6 per night in Worcester and Queen Annes Counties. Heavy egg laying on snap beans and soybeans expected in Dorchester County next 2 weeks. Infested field corn ranged 4-12 percent in Kent, Queen Annes, and Talbot Counties. (U. Md., Ent. Dept.). VIRGINIA - Larvae feeding on sorghum heads averaged less than 4 per row foot in Dinwiddie, Sussex, and Richmond Counties. (Allen). NORTH CAROLINA - Infestation in Coastal Plains less than one larva per row foot of soybeans (threshold level); some fields near economic levels. Late varieties should be watched. (Cullipher, Bradley). TENNESSEE - Surveys in soybeans in central and western areas indicate population below control levels. (Gordon). ARKANSAS - Continue to increase in soybean fields; small percentage of fields treated in east-central and southeast areas where infestations more common. Heaviest counts ranged 60-70 per 30 row feet. Treatment level, 60 larvae per 30 row feet, determined by plant shaking method. (Boyer). ALABAMA - Larvae heavy, 4-5 per head, in 105 acres of grain sorghum in Sumter County field. (Lashley, Henderson). GEORGIA - Damaged sorghum in southern areas. (French). FLORIDA - Larvae common in unsprayed flowering sorghum heads at Quincy, Gadsden County. (Greene). SOUTH CAROLINA - Extremely widespread on soybeans east of Columbia, Richland County. Damage dependent on control (Thomas). Little damage in Orangeburg County. Good control (Langford).

GREENBUG (Schizaphis graminum) - TEXAS - Light to moderate in Trans-Pecos area; ranged 20-70 per plant in most fields. (Neeb). COLORADO - Decreased in sorghum in Arkansas Valley; none found in some fields. (Schweissing). IOWA - Specimens collected in grain sorghum in O'Brien County August 16. This is a new county record. (Iowa Ins. Sur.).

HORNWORMS (Manduca spp.) - TENNESSEE - Continue to cause moderate damage to unharvested tobacco in Franklin County. One larva to every 5 stalks. About 50 percent parasitized. (Cagle).

POTATO LEAFHOPPER (Empoasca fabae) - MARYLAND - Adults and nymphs ranged 5-15 per row foot in 200 acres of snap beans in Wicomico County. Leafhoppers in soybeans remain light, ranged 1-5 per row foot, statewide. Ranged less than 1 per row foot in 100 acres of carrots in Caroline County. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Light (10-20 per 10 sweeps) of alfalfa in Caddo, Washita, and Kiowa Counties. (Okla. Coop. Sur.). KANSAS - Light in alfalfa in southeast, south-central, and west-central districts. Averages per 10 sweeps ranged as follows by county (number fields in parentheses): Harvey, 5 (1); Sedgwick, 8-25 (3); Sumner, 10-60 (3); Cowley, 8-30 (5); Butler, 5-20 (2); and Scott, 4 (1). (Bell). COLORADO - Increased in Arkansas Valley and found to some extent in every field. Heaviest in Crowley, eastern Bent, and Prowers Counties; ranged 100-5,000 per 100 sweeps. (Schweissing). NORTH DAKOTA - Wingless adults and nymphs collected from several alfalfa fields in southern Dickey County. Populations less than 1 per 100 sweeps. This is first record for Dickey County. First recorded in State in La Moure County during 1962. (Kaatz).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - KANSAS - In Brown County, mostly last instar second-generation larvae found and no pupae or evidence of second-generation pupation. May not be partial third generation in this area as occurred in 1970. Field of late corn (milk-stage) in Marshall County, observed some late third and early fourth instar larvae in addition to last instar larvae. Second-generation borers infested 5-20 percent of stalks. (Bell). NEBRASKA - Very light in 11 cornfields in Loup, Brown, Rock, and Keya Paha Counties. (Berogan). About 30 percent of plants examined in 10 cornfields in the McCook area (Red Willow County) infested with second-brood borers. (Campbell). IOWA - Second-brood borers, 80 percent fifth instar and 20 percent fourth instar on September 3. One fresh male moth caught in light trap at Ankeny night of September 1, and one fresh female moth night of September 2, indicating that some pupation occurred but probably less than 1 percent. (Iowa Ins. Sur.). WISCONSIN - Light in Outagamie, Dodge, and Rock Counties. No larvae found in 150 ears of sweet corn checked at one Dodge County site. Up to 25 percent of plants show ear feeding in individual fields in Grant County. Second-generation borers range from egg to fourth instar in southern and southwestern areas, third instar larvae most prevalent. Fresh egg masses on late field corn ranged 0-8 per 100 plants in southwestern area. Threat to sweet corn nearly passed in southern areas. (Wis. Ins. Sur.). MICHIGAN - Adult emergence declining at all blacklight stations. Highest moth count 127 from Monroe County station. Other weekly county totals: Lenawee 62; Berrien 65; Ottawa 88; Oceana 46; Bay 38; and Montcalm 18. (Newman).

OHIO - Second-generation larvae of Ostrinia nubilalis emerged in northern areas. (Andress). DELAWARE - Adults averaged 82 per night at Bridgeville, Sussex County. (Burbutis, Lesiewicz). MARYLAND - Most infested fields range above 25 percent. Moth flights decreasing. Adults ranged 4-10 per night in Dorchester and Queen Annes Counties light trap. (U. Md., Ent. Dept.). First and second instar larvae in snap beans in Dorchester and Wicomico Counties. Canners condemned 1,500 cases ($4,500) due to presence of borers in cans. (U. Md., Ent. Dept.). ALABAMA - Larvae heavy and tunneling in stalks of grain sorghum near Cottonwood in Houston County on August 20. This is a new county record. (Wilson et al.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - PENNSYLVANIA - Adults 1-40 per stalk in field corn (moderate to heavy) feeding on silks and tassels; damage light in Rock Spring, Centre County. (Adams). MARYLAND - Heaviest adult counts ranged 1-4 per 100 silks of corn. (U. Md., Ent. Dept.). NORTH CAROLINA - Adults light on fresh silks in McDowell, Watauga, Burke, Caldwell, and Iredell Counties. These are new county records. (Hunt).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MICHIGAN - Adults taken on August 12 by T. Drozd in Allegan County. Determined by R. Ruppel. This is a new State record. Adults taken in Cass County on August 31, for a new county record. (Ruppel, Sackrider).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - Adults migrating from older corn into younger corn, small grains, and alfalfa. Field with average of 5 adults per ear last week had only one per ear this week. Noticeable leaf feeding by D. virgifera observed on corn in Winnebago County; and in southern Sauk County as many as 20 adults per plant in field of late corn. Considerable damage to tips of marketable sweet corn evident in some portions of Dane County. (Wis. Ins. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Heavy in sorghum in Atoka County and light in Marshall County. None seen in 2 fields of blooming sorghum in Caddo and Kiowa Counties. (Okla. Coop. Sur.). ARKANSAS - Adults ranged 10-15 per head in blooming sorghum in Washington County. (Boyer). KENTUCKY - Adults ranged 8-10 per sorghum head in Marshall County. (Barnett). ALABAMA - Adult ranged 20-40 per head on blooming grain sorghum August 31 in Lee County field adjoining older plants. For several days prior observed 1-5 adults per head. (McQueen). FLORIDA - Larvae heavy on unsprayed blooming sorghum heads at Quincy, Gadsden County. (Greene).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Infesting unsprayed, young (1 foot high) sweet and field corn at Quincy, Gadsden County. (Greene). NORTH CAROLINA - Larvae increased on corn and sorghum in Piedmont and Coastal Plains. In Coastal Plains, 5-10 percent of plants with at least one larva. (Bradley). MARYLAND - Infestations remain spotty in late-planted corn. Heaviest damage averaged 1 percent in 75 acres of field corn near Henderson, Caroline County. (U. Md., Ent. Dept.). OKLAHOMA - Ranged 1-3 per plant on sorghum in Caddo County. Ranged 0-2 per head of grain sorghum in Caddo, Washita, and Kiowa Counties; light in most fields. (Okla. Coop. Sur.).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - In Brown and Rock Counties, larvae averaged less than 1 per 25 ears in 5 cornfields. These are new county records. Negative in Loup and Keya Paha Counties. About 50 percent of plants in field near North Platte, Lincoln County, infested with 1-2 per ear. (Campbell).

DINGY CUTWORM (Feltia subgothica) - MICHIGAN - Collections nearing seasonal peak at all stations. Lenawee County station weekly total 235 moths. Other stations by county as follows: Monroe, 156; Montcalm, 159; Oceana, 191; Bay, 176; and Ottawa, 88. Occasionally damages field crops, but normally larvae prefer low growing weeds. No evidence of field damage reported. (Newman).

SORGHUM WEBWORM (Celama sorghiella) - NORTH CAROLINA - Infested 30-50 percent of heads in 25 acres of sorghum in Pender County and 1 acre in Jones County. Scattered reports from Union County area. (Falter).

BANKS GRASS MITE (Oligonychus pratensis) - WYOMING - Ranged 10-20 percent in 4 fields near Powell, Park County on August 25 (Murray). On August 31, 3 additional fields of corn showing 10-20 percent infestation. (Burkhardt). COLORADO - Still on corn throughout Arkansas Valley. Heavy counts and damage found in individual fields in Prowers, Bent, Otero, Crowley, and Pueblo Counties. Also noted on sorghum in same area but counts light and damage not apparent. (Schweissing). OKLAHOMA - Moderate to heavy on sorghum in some areas of Cimarron County. (Okla. Coop. Sur.). TEXAS - Light in Glasscock, Reagan, Martin, Midland, and Pecos Counties. In Reeves County, increased in most fields. Light increase on sorghum in El Paso County. Light in Dell City area of Hudspeth County. In Sherman County, some isolated controls on sorghum. (Neeb, Clymer).

SPIDER MITES - UTAH - Damage to corn leaves increasing in many areas, associated with very dry, hot August. Control most extensive in Utah County (Knowlton). Becoming more severe in Weber County corn (Boyer, Roberts).

TURF, PASTURES, RANGELAND

A CERAMBYCID BEETLE (Dectes texanus texanus) - TENNESSEE - Adults collected from following counties: Madison, Haywood, Crockett, Henry, Hardeman, McNairy, Chester, Henderson, Hardin, Decatur, Carroll, Gibson, Lake, Obion, Weakley, and Benton for new county records. Collected July 28 through August 31. All adults collected from cockleburs in soybean fields and no adults collected in fields devoid of cocklebur plants. In 1970, immature Dectes collected for new State record from Tipton, Madison, and Haywood Counties; reported as Dectes sayi. However rearing immatures into adults indicated species was D. texanus texanus. Investigations indicate this species not economic but potential for economic damage indicated by heavy populations in some fields. (Gordon).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - OKLAHOMA - Averaged 5 per 10 sweeps of alfalfa in Kiowa County field. Unspecified tachina fly laid eggs on about 50 percent of larvae, with 1-13 eggs per larva. (Okla. Coop. Sur.). KENTUCKY - Larvae, 40 per 100 sweeps, damaged alfalfa in Warren County. (Barnett). WISCONSIN - Half-grown larvae ranged 2-6 per 10 sweeps in most alfalfa. (Wis. Ins. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Averaged 80 per 10 sweeps of alfalfa in Caddo County field. Light (0-3 per 10 sweeps) in 2 fields in Washita and Kiowa Counties. (Okla. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Few half-grown larvae and adults still found in some lush alfalfa in southern part of State. Confirmation made of specimens recovered earlier for new county records as follows: Langlade, Lincoln, Taylor, Clark, and Pepin. (Wis. Ins. Sur.). COLORADO - Larvae decreased in all areas of Arkansas Valley; ranged 0-600 per 100 sweeps. (Schweissing).

PEA APHID (Acyrthosiphon pisum) - WYOMING - Ranged from average of 36 in some alfalfa to as high as 2,332 per 10 sweeps in other fields August 25 in Park County (Burkhardt). On August 31, ranged 10-70 per 10 sweeps (Murray). Ranged 10-50 per 10 sweeps near Torrington, Goshen County (Stringer). KANSAS - None found in field in Scott County where 2,000 per 10 sweeps found 14 days ago. Lady beetles abundant. (Bell).

SWEETCLOVER APHID (Therioaphis riehmi) - OKLAHOMA - Collected from yellow sweetclover in Okmulgee County May 1971. Determined by L.M. Russell. This is a new county record. (Okla. Coop. Sur.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Averaged 32 per 10 sweeps in Caddo County alfalfa field. Ranged 0-2 per 10 sweeps in 2 fields in Washita and Kiowa Counties. (Okla. Coop. Sur.).

LEAFMINER FLIES (Agromyza spp.) - MASSACHUSETTS - Adults 410 per 100 sweeps of alfalfa in Hampshire County field. (Miller).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Heavy, adults 20-25 per plant in 35 acres of soybeans at Orangeburg and Calhoun County line, causing 50 percent foliage loss. (Langford). NORTH CAROLINA - In 2 of 15 fields in Coastal Plains 15-20 percent of upper leaves defoliated. Remaining fields light defoliation. Larvae and adults increasing. (Hunt). VIRGINIA - Damage in Tidewater regions still light, but increasing. Expected increase has not developed. (Hofmaster). MARYLAND - Adults and larvae damaged 500 acres of soybeans in Shorptown, Quantico, and Salisbury area of Wicomico County. Controls needed. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - KANSAS - Larvae averaged 15 per 30 row feet of soybeans in Sumner County field, 21 and 42 in 2 Cowley County fields, and 6 in Butler County field. (Bell).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Larvae 5 per plant on 300 acres of soybeans in Marlboro County; caused about 10 percent foliage loss. Not expected to affect yield due to extra heavy growth of plants. (Smith).

PEANUTS

REDNECKED PEANUTWORM (Stegasta bosqueela) - OKLAHOMA - Averaged 10 and 20 percent of terminals infested in 2 fields of irrigated peanuts in Caddo County. (Okla. Coop. Sur.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Infestations averaged 50 percent in untreated cotton and 2 percent in treated cotton in Tipton area, Tillman County. Ranged up to 82 percent in Johnston County. Scattered heavy infestations continue in several southwestern and west-central counties. Averaged 22 percent in Payne County. Moderate in Marshall and Cleveland Counties. (Okla. Coop. Sur.). LOUISIANA - Weevil punctured squares still heavy in many fields. As number of squares become fewer, it takes fewer weevils to puncture a high percentage of squares. (Tynes et al.). MISSISSIPPI - Adults remain in many fields throughout State. However, infestations still spotty with no general trend indicated. (Robinson). In delta counties, punctured squares averaged 12.94 (maximum 65) percent in 8 of 9 fields, no change from prior period. (Pfrimmer et al.). TENNESSEE - Continue to cause heavy damage to small bolls in late cotton. Heavy throughout cotton-growing area. Conditions ideal for buildup. Migrating weevils making controls very difficult. (Locke). Surveys in southern counties of central area indicate new generation of weevils will begin emerging about September 5. Some fields may require controls to protect small bolls. (Gordon). ALABAMA - Still heavy throughout State. Control effective in most fields. Adults feeding and laying eggs in bolls where squares becoming fewer. (McQueen). GEORGIA - Percent punctured squares averaged 95 in untreated plots and 12 in treated plots in Spalding County (Tippins); still increasing statewide. (Womack).

BOLLWORMS (Heliothis spp.) - NEW MEXICO - Some spotty, heavy H. zea populations noted in cotton in southern Dona Ana County. (Campbell). OKLAHOMA - H. zea damage ranged 8-10 percent in untreated cotton and averaged 5 percent in treated cotton in Tipton area, Tillman County. Averaged 1 percent in Payne County. Moderate in Marshall County and light in Johnston County. Ranged 52-90 percent in untreated cotton in Grady County. Of 189 larvae collected in Grady County, 11 percent H. virescens. (Okla. Coop. Sur.). TENNESSEE - H. zea causing considerable damage throughout area. Egg laying still heavy in rank cotton. Many fields no longer attractive. Eggs still being laid down in plant as well as in terminal buds. (Locke). Surveys in southern counties of central area indicate that larvae below control levels. No eggs found; adults expected to emerge in about 7 days. (Gordon). MISSISSIPPI - Eggs appearing from record breaking flight of moths recorded in delta last week. (Robinson). In delta counties, moth catches declined in light traps. Egg laying underway. Controls mostly satisfactory. (Pfrimmer et al.). ALABAMA - Moth flights still heavy. Egg laying heavy and larvae troublesome to control. (McQueen). GEORGIA - Increased statewide (Womack); percent punctured squares light but increasing in Spalding County (Tippins).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Egg masses 2 per 10 pepper plants, with 38 percent infestation at Bridgeville, Sussex County. Infestation averaged 60 percent in untreated peppers at Georgetown. (Burbutis, Lesiewicz).

VARIEGATED CUTWORM (Peridroma saucia) - OHIO - Larvae infested commercial tomatoes in northwestern area. In some fields as many as 8 holes per tomato evident, August 23. (Miller). COLORADO - Damaged tomato fruit near Fort Collins, Larimer County. (Hantsbarger).

YELLOWSTRIPED ARMYWORM (Prodenia ornithogalli) - COLORADO - Larval damage severe to fruit in some fields in Prowers, Crowley, and Otero Counties; larvae 4-5 per linear row foot. (Schweissing).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Larvae damaged 4 acres of tomatoes in Morgan County. Controls difficult. Troublesome in north St. Clair County during past 30 days. Heavier than during past 3 years. Controls generally satisfactory. (Rutledge et al.).

BEANS AND PEAS

COWPEA APHID (Aphis craccivora) - IDAHO - One of heaviest and general infestations known in Twin Falls, Twin Falls County, beanfields. Lady beetles and green lacewings have aphid population under control in some fields. Sprayed fields became reinfested to before-treatment levels soon because of absence of predators, August 30. (Peay).

MEXICAN BEAN BEETLE (Epilachna varivestis) - WYOMING - Damage moderate to heavy to dry beans (65 to 85 percent plants infested); some pods damaged and not filled in Torrington area, Goshen County. Adults 10 per 10 sweeps in adjacent alfalfa. (Burkhardt).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Adults increased at all blacklight stations, but field damage reports not as numerous as other years. (Newman). COLORADO - Infested average of 10 percent of cabbage heads in Arkansas Valley. (Schweissing). NEW MEXICO - Eggs of this species and Heliothis zea (corn earworm) heavy in some lettuce fields. Some requiring treatment every 3 days. (N.M. Coop. Rpt.).

CUCURBITS

SQUASH BEETLE (Epilachna vorealis) - ALABAMA - Adults collected in gardens in Lee and Montgomery Counties. These are new county records. (McCabe et al.).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - MARYLAND - Collected on volunteer asparagus in home planting at Beltsville, Prince Georges County by J.W. Gentry on September 4, 1971. About 1 small colony per stalk causing small rosettes on branches of mature ferns. Nymphs and winged males present. Determined by L.M. Russell. This is a new State record. (Gentry).

Weather of the week continued from page 654.
to the 50's. The high 80's and 90's were common over the Great Plains from the Dakotas and Minnesota to Texas. The Northeast warmed to near 90° by Sunday. Bay City, Michigan, and Boston, Massachusetts, registered 92° Sunday afternoon. In general, weekly mean temperatures averaged below normal over most of the West, above normal over the North Central and Northeast and near normal over the Southeast.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK
SEPTEMBER 1971

The National Weather Service's 30-day outlook for September is for temperatures to average above seasonal normals along the middle and north Atlantic coast as well as over the northern and central Plains, the upper Mississippi Valley and west of the Continental Divide. Below normal temperatures are indicated for the South while near normal averages are expected in unspecified areas. Precipitation is expected to exceed normal in portions of the south Atlantic Coast States, as well as over the southern Plains and the central and southern Plateau region. Subnormal totals are indicated for the northern Plains, the middle Mississippi Valley and the Ohio Valley. Elsewhere near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - UTAH - Moderate to severe in Salt Lake and Davis County orchards (Burningham), moderate in Washington County apple and pear orchards (Huber) and in Juab County. (Esplin).

PEARSLUG (Caliroa cerasi) - UTAH - Severe in some Cache, Davis, Salt Lake, Utah, Tooele County cherry orchards (Burningham, Burtenshaw), moderate in Juab County (Esplin), light in Washington County (Huber), and Iron County (Sjoblom). (Knowlton).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Moderate to heavy on pecans in Rogers County; adults still emerging. Moderate in Kay and Marshall Counties. (Okla. Coop. Sur.).

PEACH TWIG BORER (Anarsia lineatella) - CALIFORNIA - Larvae 3 per stem on almond trees in Tracy, San Joaquin County. (Cal. Coop. Rpt.).

BLACKMARGINED APHID (Monellia costalis) - OKLAHOMA - Still moderate to heavy on pecan in many areas. Reported from Rogers, Cleveland, Marshall, and Cotton Counties. (Okla. Coop. Sur.).

A LEAFMINER FLY - SOUTH CAROLINA - Probably Lithocolletis caryaefoliella heavy in 50 acres of pecan trees in Calhoun County. Larvae, pupae, and adults present. Heavy defoliation; 50+ larvae miners per leaf. (Nash).

CITRUS

Insect Situation in Florida - End of August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 78 (norm 50) percent of groves on leaves; economic in 54 (norm 33) percent and infested 86 (norm 60) percent of groves on fruit; economic in 70 (norm 44) percent. Decreased on leaves and fruit but both still above normal and at high level. Little change expected. All districts in high range. CITRUS RED MITE (Panonychus citri) infested 47 (norm 49) percent of groves; economic in 24 (norm 19) percent. Population at normal low level. Little change expected. All districts low. TEXAS CITRUS MITE (Eutetranychus banksi) infested 19 (norm 23) percent of groves; economic in 4 (norm 9) percent. Population continued to decrease. Below normal and very low. Little change expected until fall increase begins in early October. GLOVER SCALE (Lepidosaphes gloverii) infested 64 (norm 44) percent of groves; economic in 7 (norm 8) percent. Population above normal and in moderate range. Slight decrease expected. Highest district south. PURPLE SCALE (L. beckii) infested 49 (norm 44) percent of groves; economic in 2 (norm 2) percent. CHAFF SCALE (Parlatoria pergandii) infested 32 (norm 34) percent of groves; economic in 1 (norm 3) percent. YELLOW SCALE (Aonidiella citrina) infested 24 (norm 24) percent of groves; economic in none (norm 7) percent. All at or below normal low level in all districts. Little change expected. BLACK SCALE (Saissetia oleae) infested 53 (norm 57) percent of groves; economic in 32 (norm 36) percent. Hatch of new brood of crawlers will cause population to remain in moderate range which is near normal for September. Decrease expected in October. Highest districts east and central. AN ARMORED SCALE (Unaspis citri) infested 29 percent of groves; economic in 21 percent. Population near level of past 3 months and higher than in any prior August. Increase expected. WHITEFLIES infested 73 percent of groves; economic in 18 percent. Population slightly above normal and moderate. Adults increasing and starting to deposit eggs on early fall flush. Highest districts west and east. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEW MEXICO - Light to medium on grapes in Las Cruces, Dona Ana County. (Durkin).

ORNAMENTALS

A LACE BUG (Stephanitis takeyae) - PENNSYLVANIA - Heavy on Exhury deciduous azaleas at Gladwyne, Montgomery County. (Christie, Wolff). New host variety (Simmons).

FOREST AND SHADE TREES

AN OLETHREUTID MOTH (Rhyacionia bushnelli) - CALIFORNIA - Adult reared from Monterey pine (Pinus radiata) in Santee, San Diego County, from larvae collected July 23, 1971, by V. Cooke. Determined by M. Gardner. This is a new State record. (Cal. Coop. Rpt.).

SADDLED PROMINENT (Heterocampa guttivitta) - PENNSYLVANIA - Defoliation heavy to complete over 2,000 acres of sugar maple and beech in Potter County. Following 2 years of heavy infestations still causes light to moderate defoliation with about 10 percent tree mortality on 5,000 acres and sick-appearing forests on several thousand more acres in Wayne County. (Nichols).

FALL WEBWORM (Hyphantria cunea) - NEVADA - Heavy and damage severe to western chokecherry in Carlin and Palisade area, Elko and Eureka Counties. (Peters, Zunino). WEST VIRGINIA - Larvae caused moderate to heavy damage to cherry, elm, walnut, and oak in Brooke and Ohio Counties, August 25. (W.Va., Ins. Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEVADA - Heavy damage and above normal at Tonopah and Beatty, Nye County, and above normal in areas of Las Vegas, Clark County. (Zoller). IOWA - Collected in homes in Sac County August 24 and Audubon County August 23. These are new county records. (Iowa Ins. Sur.). MISSISSIPPI - Defoliation near 100 percent of some elm trees in Rankin County. (Brown).

GALL APHIDS (Adelges spp.) - PENNSYLVANIA - Adults of A. abietis (eastern spruce gall aphid) and A. cooleyi (cooley spruce gall aphid) moderate to heavy on Colorado, Norway, and White spruce trees caused some tip kill in 20+ acre areas at Port Matilda, Centre County, and at Conneaut Lake, Crawford County. (Adams).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 13 cases reported in U.S. August 23-27 as follows: TEXAS - Kinney 3, San Saba 2, Lampasas 2, Bowie 1, Val Verde 1; ARKANSAS - Little River 2; ARIZONA - Graham 1. Cases reported August 30 to September 3 as follows: TEXAS - Kinney 2, Lampasas 3, San Saba 2, Presido 1, Val Verde 3, Crockett 1, Uvalde 2, Bowie 1, Maverick 1, Terrell 1; ARKANSAS - Little River 2. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Light to moderate (200-500 per head) on cattle in Oktibbeha, Monroe, Lee, Chickasaw, Clay, Lowndes, and Noxubee Counties. (Robinson). TEXAS - Heavy on livestock in High Plains and Trans-Pecos counties. Moderate in Wilbarger and Knox Counties. Heavy in Fisher County. (Clymer et al.). OKLAHOMA - Ranged 800-1,000 per head on cattle in Major County. Heavy in Cotton County and moderate in Tulsa, Kay, and Cleveland Counties. (Okla. Coop. Sur.).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Adults averaged 25 per face on cattle in Monroe, Chickasaw, and Lee Counties in one herd of 200 cattle. In one herd of 200 cattle in Monroe County, some individual cows had up to 50 per face. (Robinson). WISCONSIN - Counts moderate in most counties but severe annoyance to cattle reported in Iron and Chippewa Counties. (Wis. Ins. Sur.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Counts on cattle moderate in all areas except Sauk and Adams Counties, where heavy. Activity most intense on warmer days. Controls underway in all counties. (Wis. Ins. Sur.).

MOSQUITOES - MINNESOTA - Light trap counts decreased week ending August 27 with Aedes vexans accounting for 67 percent of 2,287 females taken. Over 50 percent of larval collections contained A. vexans. In evening, bite collections over 80 percent A. vexans and in daytime, collections 89 percent this species. A. stimulans, A. excrucians and A. fitchii accounted for 8 percent of total. (Minn. Pest Rpt.).

BENEFICIAL INSECTS

AN EULOPHID WASP (Tetrastichus incertus) OHIO - Found in sample collected on July 18, in Washington County. This is a new county record. (Flessel).

GREATER WAX MOTH (Galleria mellonella) - ALABAMA - Larvae damaged several stands of bees at Bynum, Calhoun County. (Butler et al.).

HONEY BEE (Apis mellifera) - WEST VIRGINIA - Of 1,705 colonies inspected in August, 19 diseased with American foulbrood. (W.Va. Ins. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Single ivy plant infested at Lindsay, Tulare County. (Cal. Coop. Rpt.).

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - First adults of season collected August 23. Emergence light in Blaine, Whatcom County. (Leckie).

GRASSHOPPERS - NORTH DAKOTA - Adult survey completed. Total of 581 stops in 24 counties. Infestations increased but widely scattered and mostly light (2 ratings). Light in north-central, south-central, northeast, east-central and southeast counties. Economic (3 ratings) in parts of Morton, Cass, Ransom, and Richland Counties. Estimated 135,000 acres of cropland show 3 ratings. Dominant species Melanoplus bivittatus, M. sanguinipes and M. femurrubrum. Rangeland infestations noneconomic in all areas except in Ransom and Richland Counties; about 12,000 acres show 3 ratings. Dominant cropland species Melanoplus bivittatus. With favorable conditions next spring, infestations expected to increase again in 1972. (Brandvik, Grasser). OKLAHOMA - Adult survey during August shows 1,900,000 acres of rangeland in 32 counties economically infested. Light to threatening populations in crop margins and roadside habitats throughout area. Dominant rangeland species Phlibostroma quadrimaculatum, Ageneotettix deorum, Drepanopterna femoratum, Amphitornus coloradus, Syrbula admirabilis, Melanoplus occidentalis, Metator pardalinus, and Hesperotettix speciosus. Dominant crop margin and roadside species Melanoplus differentialis, M. bivittatus, M. M. packardii, Hesperotettix speciosus, and Aeoloplides turnbulli. (Okla. Coop. Sur.). UTAH - Outbreaks occurred at Paragonan and on Cedar Mountain in Iron County. (Sjoblom). In many localities along Wasetch Front, Box Elder through Utah Counties, grasshoppers moving from drying rangeland into farms, orchards, and adjacent home gardens causing injury. (Knowlton). Some outbreaks in Uintah County. (Hunsaker). OREGON - Economic levels of 8+ per square yard occurred on estimated 1,292,000 acres of range and cropland in 1971. Dominant species Melanoplus sanguinipes, M. packardii, Camnula pellucida, and Oedaleonotus enigma. No control programs initiated. (Goeden, Gorham).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Trapped 4 moths in Franklin County by R.J. Angle on August 12. Determined by D.M. Weisman. This is a new county record. (Simmons).

JAPANESE BEETLE (Popillia japonica) - OHIO - Grubs averaged 36 per square foot in golf course in Wayne County. (Niemczyk). TENNESSEE - Adults collected on wild grape at Hales Crossroads, Hamblen County, by M.E. Snodgrass on July 13. Determined by V.H. Owens, confirmed by R.D. Gordon. This is a new county record. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Sterile moths released in San Joaquin Valley totaled 3,147,000. Total for 1971 season to date 69,381,000. (PPD). ARIZONA - Larval boll infestations ranged 8-10 percent, one infestation of 40 percent excluding exit hole counts, in Yuma County. Infestations increased in portions of Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Boll sample checks from Las Cruces, Dona Ana County, south, reveal very light populations. (N.M. Coop. Rpt.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Found infesting one soybean field in each of Lincoln and Franklin Counties, for new county records. Dates of collection were August 30 and 31, 1971. First time found in central area. Cyst population heavy in sample taken in Lincoln County. (Gordon, Cagle). FLORIDA - Cysts collected in Santa Rosa County by J. Bishop on August 24. Determined by V.H. Owens, confirmed by W. Freedman. This is a new county record. (PPD).

A WHITEFRINGED BEETLE (Graphognathus leucoloma striatus) - ARKANSAS - Adult collected at Hardy, Sharp County, by J.H. White on August 26; MISSISSIPPI - adult collected at Oakland, Tallahatchie County, by J.H. Mills on August 4; GEORGIA - adults collected at Crawfordville, Taliaferro County, by B. Hughes on August 26. Determined by V.H. Owens, confirmed by R.E. Warner. These are new county records. (PPD). - TENNESSEE - Graphognathus spp. heavy in soybean field in Madison County; large stalks dying from larval feeding. To date, damage estimated at 10 percent; however, damage expected to increase. (White). Found in soybean field near Huntland in Franklin County. Population heavy, damage very light and spotted. (Cagle, Gordon).

DETECTION

New State Records - ASPARAGUS APHID (Brachycolus asparagi) MARYLAND - Prince Georges County. (p. 660). AN OLETHREUTID MOTH (Rhyacionia bushnelli) CALIFORNIA - San Diego County. (p. 662). WESTERN CORN ROOTWORM (Diabrotica virgifera) MICHIGAN - Allegan County. (p. 656).

New County Records - ALFALFA WEEVIL (Hypera postica) WISCONSIN - Langlade, Lincoln, Taylor, Clark, Pepin (p. 658). A CERAMBYCID BEETLE (Dectes texanus texanus) TENNESSEE - Madison, Haywood, Crockett, Henry, Hardeman, McNairy, Chester, Henderson, Hardin, Decatur, Carroll, Gibson, Lake, Obion, Weakley, Benton (p. 657). ELM LEAF BEETLE (Pyrrhalta luteola) IOWA - Sac, Audubon (p. 662). EUROPEAN CORN BORER (Ostrinia nubilalis) ALABAMA - Houston (p. 656). AN EULOPHID WASP (Tetrastichus incertus) OHIO - Washington (p. 663). GREENBUG (Schizaphis graminum) IOWA - O'Brien (p. 655). GYPSY MOTH (Porthetria dispar) PENNSYLVANIA - Franklin (p. 664). JAPANESE BEETLE (Popillia japonica) TENNESSEE - Hamblen (p. 664). NORTHERN CORN ROOTWORM (Diabrotica longicornis) NORTH CAROLINA - McDowell, Watauga, Burke, Caldwell, Iredell (p. 656). SOYBEAN CYST NEMATODE (Heterodera glycines) TENNESSEE - Lincoln, Franklin; FLORIDA - Santa Rosa (p. 664). SPOTTED ALFALFA APHID (Therioaphis maculata) NORTH DAKOTA - Dickey (p. 656). SWEETCLOVER APHID (Therioaphis riehmi) OKLAHOMA - Okmulgee (p. 658). SQUASH BEETLE (Epilachna borealis) ALABAMA - Lee, Montgomery (p. 660). WESTERN BEAN CUTWORM (Loxagrotis albicosta) NEBRASKA - Brown, Rock (p. 657). WESTERN CORN ROOTWORM (Diabrotica virgifera) MICHIGAN - Cass (p. 656). A WHITEFRINGED BEETLE (Graphognathus leucoloma striatus) ARKANSAS - Sharp; MISSISSIPPI - Tallahatchie; GEORGIA - Taliaferro (p. 664).

HAWAII INSECT REPORT

General Vegetables - CORN EARWORM (*Heliothis zea*) moderate to heavy in 5 acres of field corn at Kaaawa, Oahu; about 80 percent of mature ears with at least one larva. (Kawamura).

Fruits and Nuts - A BARK BEETLE (*Xylosandrus compactus*) moderate to heavy on coffee and Annona trees at Kona, Hawaii. First record on this portion of island. On heavily infested *Annona* trees, emergence holes averaged 8 per foot of 0.25 inch twigs; averaged 4 holes per similar sampling on adjacent coffee trees. (Yoshioka). A SWALLOWTAIL BUTTERFLY (*Papilio xuthus*) eggs collected from lime tree at Lanikai, Oahu; first record in windward Oahu. Previously recorded only in leeward areas. (Davis).

Ornamentals - Larva of a NOCTUID MOTH (*Callopistria* sp.) collected from small planting of fishtail fern (*Nephrolepis biserrata* var. *furcans*) at home at Moanalua, Oahu. This new immigrant pest apparently established in scattered areas on Oahu during past few months; Moanalua about 9 miles from original discovery site. Late July, infested fern at Waimanalo, Oahu; about 10 miles from first recorded site. (Kumashiro).

Forest and Shade Trees - Larvae of a GEOMETRID MOTH (*Scotorythra* sp.) moderate in 100 acres of Acacia koa at Waikamoi, Maui; defoliation about 50-75 percent on most trees. (Wong, Miyahira). All stages of a PSYLLID (*Psylla uncatoides*) trace on *Acacia confusa* trees at Manoa, Oahu; adults averaged less than 1 per 10 sweeps. Negative on same host at Punchbowl, Waimanalo, Mililani, and Makiki Round Top, Oahu. (Kashiwai, Kawamura).

General Pests - Survey of anthurium nurseries at Pahoa, Hawaii, revealed varying degree of damage to flowers by oviposition and feeding of NARROW WINGED KATYDID (*Elimaea punctifera*). Damage to flowers cultivated under saran and tree fern or cleared forest areas: 2-10 (averaged 4) percent; 10-80 (averaged 48) respectively. Citrus groves adjacent to heavily damaged anthurium plantings severely affected by feeding damage to young terminal leaves, flowers and newly formed fruits. Nymphs and adults moderate on citrus. (Shigenaga).

Miscellaneous Pests - Two adults of VAGRANT GRASSHOPPER (*Schistocerca vaga*) taken at large at Mauna Kea Beach Hotel, Hawaii. First reported in August 1965, now occurs on every major island. (Yoshioka).

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation (inches)	Type of trap (BL - blacklight, I - incandescent, MV - mercury vapor, O - other)	*Agrotis ipsilon* (black cutworm)	*Estigmene acrea* (saltmarsh caterpillar)	*Euxoa auxiliaris* (army cutworm)	*Faronta diffusa* (wheat head armyworm)	*Feltia subterranea* (granulate cutworm)	*Heliothis virescens* (tobacco budworm)	*H. zea* (bollworm, corn earworm, tomato fruitworm)	*Laspeyresia pomonella* (codling moth)	*Loxostege commixtalis* (alfalfa webworm)	*Loxostege rantalis* (garden webworm)	*Loxostege sticticalis* (beet webworm)	*Manduca quinquemaculata* (tomato hornworm)	*Manduca sexta* (tobacco hornworm)	*Ostrinia nubilalis* (European corn borer)	*Peridroma saucia* (variegated cutworm)	*Pseudaletia unipuncta* (armyworm)	*Spodoptera exigua* (beet armyworm)	*Spodoptera frugiperda* (fall armyworm)	*Spodoptera ornithogalli* (yellow-striped armyworm)	*Trichoplusia ni* (cabbage looper)
FLORIDA																							
Gainesville 8/27-9/2			BL		1			2		21						14					1	9	
IOWA																							
Kanawha 8/15-24			BL	1			38										9778		3				
Napier 8/16-19			BL	2		1	42										599	4	8				
KANSAS																							
Great Bend 8/26-9/1			BL	30		1	4			109					9				361			41	
Tribune 8/27, 28, 31			BL	12		34				62												7	
KENTUCKY																							
Bowling Green 8/30-9/1			BL	7						46									5				
Monticello 8/30-9/1			BL							1									3			22	
MISSISSIPPI																							
Stoneville 8/27-9/2	61-93	0.08	2BL	24				11	15	3430									21	1	13	135	4132
NEW JERSEY																							
Plainsboro 8/25-31			BL	162						18					9		68	8	534		39	38	
Seabrook 8/25-31			BL	47						116					23		35	39	246		26	52	74
OHIO																							
Wooster 8/27-9/1			BL	13			121			7							123	9	24	1	110		1
TENNESSEE (County)																							
Franklin 8/30-9/3			BL	7					11	42					5	7	30		61			5	
Madison 8/30-9/3			BL	3					6	94							76		1		6	7	1
TEXAS																							
Waco 8/26-9/2			BL	6				58										26	62	142	121	175	
VIRGINIA																							
Montgomery 8/26-9/1			BL	11						26					6	8	6		6			29	
Warsaw 8/26-31			BL	2						100						6	3		11			6	
WISCONSIN																							
Cedar Grove 8/24-30			BL	11						11							140	15	17		26		
De Forest 8/24-30			BL														22	13	6				

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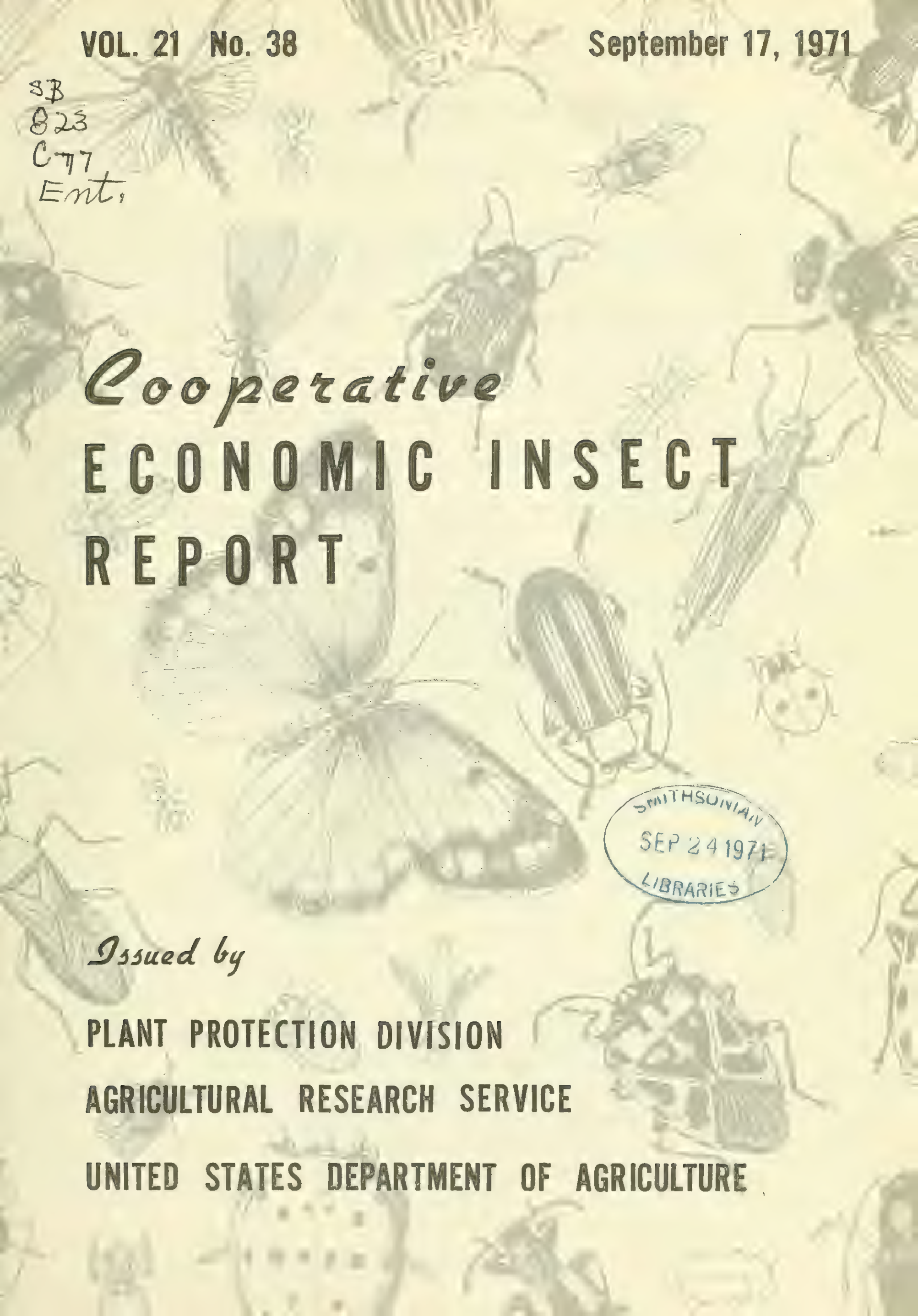

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Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Volume 21 September 17, 1971 Number 38

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM larvae damaged soybeans in South Carolina, corn in Kentucky. Moth collections increased in Wisconsin and Michigan. (p. 669).

EUROPEAN CORN BORER larvae damaged irrigated corn in limited area of South Dakota. Problem on grain sorghum in Coastal Plain area of South Carolina. (p. 669).

BANKS GRASS MITE increased on grain sorghum in El Paso County, Texas. (p. 670).

FALL ARMYWORM larvae heavy on grasses in Texas. (p. 670).

Detection

For new county records see page 672.

Reports in this issue are for week ending September 10 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 13

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Summer heat continued over much of the Nation. Hurricane Fern brought heavy rain to southern Texas.

PRECIPITATION: Early in the week a cold front stretched from Michigan to Oklahoma. Various thunderstorms occurred along front and in moist air ahead of the front. Most of the thunderstorms produced only small amounts of rain. A few were accompanied by strong winds, hail, and heavy rain. About midweek, showers and thunderstorms dotted the northern and central Rocky Mountains and the northern and central Great Plains. Mason City, Iowa, received 2.86 inches in the 24-hour period ending at 6:00 a.m. Thursday. Winds associated with Hurricane Edith reached 160 m.p.h. Hurricane Fern with winds up to 90 m.p.h. weakened as it drifted inland near Galveston, Texas. Winds decreased to about 60 m.p.h. as it moved overland. About noon Friday, Tropical Storm Ginger gained strength about 275 miles south of Bermuda. Winds associated with Tropical Storm Ginger reached sustained speeds of 55 to 60 m.p.h. Five tropical cyclones entered the weather picture during the week and over the weekend. Hurricane Edith swept across the Caribbean Sea and lashed Nicaragua and Honduras. Winds associated with Hurricane Edith reached 160 m.p.h. Edith lost strength overland but regained strength after reaching the Gulf of Mexico. Hurricane Fern with winds up to 90 m.p.h. drifted inland near Port O'Conner, Texas. Her winds diminished to about 60 m.p.h. It produced heavy rains, 4 to 8 inches at many locations and much more at a few stations. Goliad, Texas, received 10.75 inches in the 24-hour period ending at noon Saturday. Heavy rains caused widespread flooding. Hurricane Ginger with 80 m.p.h. winds was a threat to shipping, but remained too far at sea to affect the continent. Tropical Storm Heidi threatened the Atlantic seaboard Sunday, while a fifth tropical depression with 25 m.p.h. winds was moving westward near the Antilles. Weather of the week continued on page 672.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - MICHIGAN - Adults increasing, but normal for time of year. No unusual peaks yet. (Newman). TENNESSEE - Damaged Bermuda grass sod in Dyersburg, Dyer County. (Cultra, Bruer).

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Surveys in Ventura County of areas growing sugar beets, beans, peppers, and tomatoes showed that curly top disease infection below 2 percent in tomatoes and peppers. Curly top disease in sugar beets averaged 10 percent. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - ALABAMA - Damaging counts in one 20-acre field of soybeans in 6 central and western counties. Larvae averaged 3 middle instars per row foot. (Henderson, Morgan). Larvae of this species and Celama sorghiella (sorghum webworm) heavy, ranged 2-6 per head of grain sorghum at Fyffe in De Kalb County. Other nearby varieties with open developing heads show occasional larvae. (Galloway). SOUTH CAROLINA - H. zea still economic on soybeans in many areas where controls not applied. (Thomas, Nettles). KENTUCKY - Larvae damaged corn in Scott County; averaged 1.4 per ear at one location. (Barnett). VIRGINIA - Damage spotty in southern Tidewater area, some economic damage. (Allen). DELAWARE - Adults 19 per night in blacklight traps in Sussex County. (Burbutis). MICHIGAN - Sharp increase at all blacklight stations. Watch late-planted sweet corn; will need protection until frost. (Newman). WISCONSIN - Moth catches increased. At Oakfield, Fond du Lac County, counts of 76 and 77 occurred on September 7 and 8. Counts of 20 and 43 occurred at Arlington, Columbia County, on September 5 and 6. Counts of 400 and 233 occurred at Waldo, Sheboygan County, on September 5 and 6. Treatment of sweet corn underway in several areas. (Wis. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Heavy on ensilage sorghum at Safford, Graham County. (Ariz. Coop. Sur.). MAINE - Heavy and damaged several cornfields in central areas. (Gall).

GREENBUG (Schizaphis graminum) - ARIZONA - Appeared about mid-August on sorghum in Yuma Valley and currently dominant aphid in Yuma County. (Ariz. Coop. Sur.). TEXAS - Light in Trans-Pecos area; less than 50 per plant in most fields. (Neeb).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light on alfalfa in Farmington area, San Juan County. (Heninger). NEBRASKA - Ranged 31-187 per 100 sweeps in 5 Dawson County fields. (Manglitz).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - KANSAS - Larvae light (third and fourth instars) in corn in Hodgeman, Finney, and Haskell Counties. Hodgeman and Haskell are new county records. Determinations by H.L. Brooks and K.O. Bell. (Bell). SOUTH DAKOTA - Damaged irrigated corn west of Spearfish, Lawrence County. Infested 1-2 percent of stalks. Third and fourth instar larvae present. This is a new county record. (Jones, Rezek). IOWA - Collected 107 moths in light trap night of September 9 at Ankeny, Polk County. Indicates start of third brood. Moths that emerge now will decrease spring population. (Iowa Ins. Sur.). WISCONSIN - As many as 3 egg masses per 25 plants noted near Spring Green, Sauk County. Field observations show 30 percent of larvae in fifth instar, 10 percent fourth, 30 percent third, 20 percent second, and 10 percent first. Infestation of late sweet corn ranged 16-76 per 100 plants in southwestern counties. Most larvae entered ears through husks, but few still in silks. Moth flight declined. (Wis. Ins. Sur.). DELAWARE - Adults 53 per night in blacklight traps at Bridgeville, Sussex County. (Burbutis). SOUTH CAROLINA - Problem on grain sorghum, 10 percent infestations noted in several areas of Coastal Plain. (Thomas).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - SOUTH DAKOTA - Noted in corn near Oral, Fall River County. Infestations in areas of fields checked about 2 percent. Larvae mostly fifth instar, with some third to fourth. (Jones).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae of this species and Heliothis zea (corn earworm) and Celama sorghiella (sorghum webworm) moderate to heavy on sorghum in Covington County. (Pike). SOUTH CAROLINA - S. frugiperda egg masses on sweet corn in Hampton County less numerous than 1970, but still major threat. (Thomas, Nettles).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Light to moderate in Pecos, Glasscock, and Midland Counties. Increased in El Paso County grain sorghum. Heaviest in grain sorghum bordering corn. Still light in Dell City area of Hudspeth County. (Neeb).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Light in most late sorghum in southeast area. Larvae ranged 2-16 per head. (Munson).

SORGHUM MIDGE (Contarinia sorghicola) - MISSOURI - Adults still heavy in late sorghum in southeast area; ranged 6-50+ per head. (Munson).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - PENNSYLVANIA - Evidence that resistant variety of wheat damaged in several fields in south-central areas; suspect a race of M. destructor. (Kim). ILLINOIS - Populations in wheat remained light. State average same as in 1965, 1968, and 1969, when it reached record low of 2 puparia (flaxseed stage) per 100 tillers. East-southeast section shows heaviest populations. Heaviest averages 18 puparia per 100 tillers in Lawrence County. (Sur. Bul.).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Increased in counties near Denton, Denton County. Numerous larvae present in lawns, pastures, and other grasses. Heavy in pastureland in Eastland, Hood, Comanche, Erath, Titus, and Morris Counties. In Gonzales, Caldwell, and Guadelupe Counties heavy on coastal Bermuda grass. (Turney et al.).

BLACK CUTWORM (Agrotis ipsilon) - NEVADA - Larvae 4-5 per square yard caused damage to bentgrass lawn in Reno, Washoe County. (Arnett, Post).

A SOD WEBWORM (Pediasia mutabilis) - OHIO - Heavy infestation seen on grass farm in Warren County. (Miller).

A WHITEFLY (Aleurocybotus occiduus) - ARIZONA - Very heavy in Bermuda grass seed fields; honeydew evident at Yuma, Yuma County. (Ariz. Coop. Sur.).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - COLORADO - Heavy moth flight in fields of Montezuma County. (Lancaster). NEW MEXICO - Larvae light on alfalfa in San Juan and Dona Ana Counties. (N.M. Coop. Rpt.).

GREEN CLOVERWORM (Plathypena scabra) - KENTUCKY - Larvae 50 per 100 sweeps of alfalfa in Scott County. (Barnett).

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - Fresh emerged adults increased in blacklight trap located in Macleay, Marion County. (Westcott).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - IDAHO - Larvae noted on Washington County alfalfa. (Bolz). NEVADA - Damage heavy in Churchill County. Migrations heavy in Soda Lake district. (Johnson, Stitt).

ALFALFA WEEVIL (Hypera postica) - WYOMING - No larvae found in several alfalfa fields in Park and Big Horn Counties. First week no larvae found in these counties. (Murray). UTAH - Populations late in Weber County; some larval injury extending into third crop. (Rogers). NEW MEXICO - Light (larvae 4-8, adults 2-3 per 25 sweeps) of alfalfa in Farmington area, San Juan County. (Heninger).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - PENNSYLVANIA - Adults averaged 0.1 per sweep of alfalfa, causing no observable damage in Centre County; numerous adults attracted to lights of houses. (Gesell).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - PENNSYLVANIA - Adults averaged 4 per sweep of alfalfa, and less than 5 percent of females gravid in Centre County. (Gesell).

MEADOW SPITTLEBUG (Philaenus spumarius) - KENTUCKY - Adults 410 per 100 sweeps of alfalfa in Scott County. (Barnett).

PEA APHID (Acyrthosiphon pisum) - WYOMING - Declined. Ranged 10-60 per 10 sweeps of alfalfa in Park County field. (Murray). PENNSYLVANIA - Nymphs and adults averaged 3 per sweep of alfalfa in Centre County. (Gesell).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Larvae and adults in economic numbers in Surry and Middlesex Counties. (Allen).

COTTON

BOLLWORMS (Heliothis spp.) - NEW MEXICO - H. zea generally light on cotton in Dona Ana County. (N.M. Coop. Rpt.). TEXAS - H. zea light in Pecos Valley. Less than 2 percent larval infestation reported from most counties. Light, with less than 8 eggs per 100 plant terminals and less than 2 larvae per 100 plants in El Paso Valley. Light increase reported from Midland County, larvae 5-10 per 100 terminals and damaged squares 5-7 percent in isolated fields. Light with 2 percent larvae infestation in most fields in Glasscock County. (Neeb). ARKANSAS - Still found in many fields. Moth flights decreased; still potential for economic damage in suitable fields. Cotton remained green enough to attract moths away from soybeans. (Boyer et al.). TENNESSEE - H. zea damage occurring in late cotton by late instar larvae. (Locke). Late instar larvae damaged large bolls in southern middle areas. (Gordon). ALABAMA - Damaging populations that have been difficult to control reported in Macon, Dallas, Lowndes, Wilcox, and Covington Counties. (Turner et al.).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Light in isolated fields in Glasscock County. Live weevils and small percentages of punctured squares detected in fields east of Garden City on August 30. Light with few egg punctures in isolated fields in Midland County. Heavy in several north-central counties from fields still squaring. Some harvesting underway in this area. (Neeb, Turney). ARKANSAS - Controls effective with infestation levels reduced in many fields. Emergence of weevils will continue to bring about considerable activity. Newly emerging adults will be developing diapause soon. (Boyer et al.). TENNESSEE - Damage heavy to small bolls in western areas. (Locke). Damaged small bolls in late cotton in southern middle areas. New generation of adults emerging. (Gordon). ALABAMA - Still heavy statewide. Weevils migrating to younger and more acceptable fields. (McQueen).

SUGAR BEETS

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - WASHINGTON - Heavy on sugar beets at Quincy, Adams County. Less serious elsewhere in Columbia Basin and at Walla Walla, Walla Walla County. Virus yellows incidence low, except at Walla Walla where light infestation in few fields. (Landis).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Larval infestation of pepper averaged 33 percent at Bridgeville, Sussex County. (Burbutis).

TOMATO FRUITWORM (Heliothis zea) - NEW MEXICO - Larvae heavy on tomatoes in Dona Ana County. (N.M. Coop. Rpt.).

VARIEGATED CUTWORM (Peridroma saucia) - OHIO - Larvae 1-2 per tomato plant observed in 5 acres of Putnam County field. (Kimmet).

TUBER FLEA BEETLE (Epitrix tuberis) - WASHINGTON - Infested 5 acres of seed potatoes. Damaged 75 percent of plants. Some tuber damage also noted at Sumas, Whatcom County. (Holmes).

BEANS AND PEAS

GREEN CLOVERWORM (Plathypena scabra) - TENNESSEE - First and second instar larvae 4-6 per 6 row feet of beans in Gibson, Weakley, Henry, and Carroll Counties; fungi killing fourth instar larvae. Damage below control levels. (Gordon).

DETECTION

New County Records - EUROPEAN CORN BORER (Ostrinia nubilalis) KANSAS - Hodgeman, Haskell; SOUTH DAKOTA - Lawrence (p. 669). FACE FLY (Musca autumnalis) CALIFORNIA - Sacramento (p. 674). GIANT HORNET (Vespa crabro germana) INDIANA - Marion (p. 674).

CORRECTIONS

CEIR 21(36):635 - JAPANESE BEETLE (Popillia japonica) - INDIANA - Adults taken in pheromone traps ... should read ... Adults taken in bait traps ... (Meyer).

Weather of the week continued from page 668.

TEMPERATURE: Warm sunny weather prevailed over most of the Nation. Southerly breezes brought warm humid weather northward over the eastern half of the Nation. Temperatures were mostly in the 80's and 90's. Morgantown, West Virginia, registered 94° Monday afternoon. High humidity added to the discomfort of the citizens over the East. The Southwest was hotter but less humid. Temperatures in the desert regions of the Southwest approached or exceeded 100° most days. Thermal, California, registered 110° Tuesday afternoon. The Far Northwest was quite comfortable with maximums in the 60's and 70's, a warming trend pushed the maximums over the central Great Plains to near 100° or higher--100° at Sioux Falls, South Dakota, 101° at Grand Island, Nebraska, and 106° at Hill City, Kansas, on Tuesday. Cool air poured southward over the Rocky Mountains and the Great Plains Wednesday. Denver, Colorado, was about 20 degrees cooler Wednesday than Tuesday, and Pickstown, South Dakota, recorded 99° and 62° Tuesday and Wednesday afternoon respectively. A warming trend occurred over the northern and central Great Plains late in the week. On Saturday, temperatures reached the 80's over most of the Dakotas. Williston, North Dakota, recorded 89° Saturday afternoon. The hottest temperature that has come to our attention was 120° at Palm Springs, California, Sunday afternoon. Weekly mean temperatures were warmer than normal over most of the Nation. The main exception was the Far Northwest. Most of the Great Lakes region and the Northeast averaged more than 6° warmer than normal.

DECIDUOUS FRUITS AND NUTS

APPLE MAGGOT (*Rhagoletis pomonella*) - MICHIGAN - Declining; still threat to late-harvested fruit. Considerable maggot injury reported and observed. Protect late-maturing varieties. (Thompson).

EUROPEAN RED MITE (*Panonychus ulmi*) - MICHIGAN - Many southern areas troubled by all stages. Weather conditions favor reproduction and development. Populations building and caused serious bronzing on foliage. Drought and mite injury combined to produce premature leaf drop in some cases. Overwintering eggs becoming visible and increasingly numerous on calyx end of fruit. (Thompson). UTAH - Damaging pear foliage in Ogden and Roy area of Weber County. (Davis).

SPIDER MITES - UTAH - Damage serious in some sour cherry orchards in Utah County. *Tetranychus mcdanieli* (McDaniel spider mite) dominant species. *Stethorus* sp. (a lady beetle) preying on mites. Spider mites damaged apple and pear foliage in portion of Salt Lake County. (Davis).

REDBANDED LEAFROLLER (*Argyrotaenia velutinana*) - MICHIGAN - Increased (possible third generation) moth emergence in several orchards. Counts averaged 192 per trap September 3 and 7. Fruit damage can occur into October. (Thompson).

A TORTRICID MOTH (*Platynota idaeusalis*)- PENNSYLVANIA - Several hundred acres of apple orchard infested by larvae and adults in Adams and Franklin Counties; larvae from eggs laid in August 1970 pupating, emerged moths laying eggs for past 3 weeks. New larvae and those hatched in June 1971 will feed on apples this fall. (Asquith).

CITRUS

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Treating young orchards and nurseries for this pest in Yuma, Yuma County. (Ariz. Coop. Sur.). CALIFORNIA - Caused injury to young citrus trees in Fresno County. (Cal. Coop. Rpt.).

SMALL FRUITS

EUROPEAN RED MITE (*Panonychus ulmi*) - PENNSYLVANIA - Adults and larvae averaged 51 per leaf in untreated grape vineyards; bronzing of foliage noted in Erie County; current population density lower than that of last 2 weeks. (Jubb).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - SOUTH CAROLINA - Expect increasing populations and damage. (Fox).

DOUGLAS FIR TUSSOCK MOTH (*Hemerocampa pseudotsugata*) - CALIFORNIA - Infestation and damage increased in El Dorado, Calaveras, and Amador Counties. About two percent natural virus infection throughout insect populations. (Cal. Coop. Rpt.).

VARIABLE OAKLEAF CATERPILLAR (*Heterocampa manteo*) - NORTH DAKOTA - Causing defoliation in Fort Totten area, Benson County, and Killdeer Mountain area, Dunn County. In Benson County, basswood trees 100 percent defoliated, most larvae dropped to ground in prepupal stage. In Dunn County, paper birch and basswood defoliated, larvae not as far advanced; more defoliation possible. (Brandvik).

MAN AND ANIMALS

FACE FLY (Musca autumnalis) - WISCONSIN - Heavy on cattle in Chippewa County. (Wis. Ins. Sur.). CALIFORNIA - Collected and determined by L. Dunning August 31 from livestock in Sacramento County. This is a new county record. (Cal. Coop. Rpt.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Populations continue moderate on most dairy farms, heavy in parts of Calumet and Walworth Counties. (Wis. Ins. Sur.).

MOSQUITOES - CALIFORNIA - Increased in many areas. Light annoyance continues in city areas. Anopheles moved from rice fields into populated areas. Horse immunization totals about 300,000 for Venezuelan equine encephalomyelitis. Checks for disease in human and horse populations negative. (Cal. Coop. Rpt.). WISCONSIN - Very heavy from low areas in several counties throughout State. Some increase in biting noted throughout the central counties. (Wis. Ins. Sur.). MINNESOTA - Larval collections showed 70 percent of samples contained Aedes vexans, 4.5 percent contained A. triseriatus and 5.8 percent Culex tarsalis. Special efforts made to locate tree-hole breeding sites of A. triseriatus. In light trap collection 85 percent of 5,087 females taken were A. vexans, 4 percent were Culiseta morsitans, and 2.5 percent Anopheles walkeri. In evening bite collection 100 percent A. vexans. In daytime collection 71 percent A. vexans and 11 percent A. trivittatus. Other Aedes included triseriatus, fitchii, excrucians, cinereus, sticticus, and stimulans. A few Coquillettidia perturbans also taken. (Minn. Pest Rpt.).

GIANT HORNET (Vespa crabro germana) - INDIANA - A nest, built by this species, taken in Marion County. This is a new county record. (Clark).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Larvae pupating on rangeland in Lincoln County. (Nielsen).

GRASSHOPPERS - WYOMING - Adult grasshopper survey completed. Total of 163,680 acres of private, State and Federal rangeland economically infested. Aulocara elliotti, Camnula pellucida, Ageneotettix deorum, Melanoplus infantilis and Amphitornus coloradus species involved. (Hardy).

JAPANESE BEETLE (Popillia japonica) - OHIO - In August, adults removed from red raspberry plants in Lorain County averaged 25 per day. Three to 5 percent of leaves destroyed. Moderate to heavy damage observed on wild and domesticated grapes. (Kumheva).

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - Adults, male and female, seen near lights at Ferndale, Whatcom County. (Holmes).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Surveys negative at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Sterile moths released at Bakersfield, Kern County totaled 3,814,500; total of 73,195,500 moths released during 1971 season. (PPD). TEXAS - Heavy infestations in north-central areas. In Collin County, larvae averaged 2.2 per boll in fields surveyed. In Johnson, Ellis, Kaufman, and Denton Counties, extent of infestation presently unknown. Light and scattered in Pecos County; in Coyanosa area heavy infestation in isolated field. Boll infestation in El Paso County averaged less than 4 percent. Light in isolated fields in Glasscock County. (Turney et al.). FLORIDA - Eleven larvae, five pupae collected from wild cotton at Tavernier, Monroe County, August 26. Determined by V.H. Owens. (Creamer).

HAWAII INSECT REPORT

Corn - CORN LEAF APHID (*Rhopalosiphum maidis*) nymphs and adults light in 30 acres of seed corn at Kilauea, Kauai. (Sugawa).

Turf and Pasture - GRASS WEBWORM (*Herpetogramma licarsisalis*) larval infestation trace in Kikuyu and Bermuda grasses at memorial parks and golf course fairways at Kaneoke, Oahu; less than one larva per square foot; adults nil. Light trap collections indicate light increase. (Kawamura).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) light in small planting of long beans at Waimanalo, Oahu; 9 adults emerged from 22 infested petioles; parasites nil. Infestation severe in 0.1 acre of snap bean seedlings at Waimanalo, Oahu; 100 percent of seedlings with signs of larval infestation; adults trace, less than one per leaf. Infestation trace in 0.1 acre of same crop in adjacent field. Infested material held for observation. BLACK SCALE (*Saissetia oleae*) infestation heavy in backyard plantings of bittermelon (*Momordica charantia*) at Ewa, Oahu; many vines severely affected. Numerous larvae of *Azya luteipes* (a lady beetle) preying on scales. Three adults of MEMBRACID BUG (*Antianthe expansa*) collected from small backyard planting of tomato at Ewa, Oahu. Reported on tomatoes in California; this is first record on tomato in Hawaii. All stages of LEAF MINER FLIES (*Liriomyza* spp.) heavy in 0.5 acre of cucumber seedlings at Wailua, Kauai. Mines moderate on 50 percent of leaves in 0.2 acre of snap beans at Waimanalo, Oahu; adults trace, less than 1 per leaf. (Ikehara, Kawamura).

Fruits and Nuts - Several larvae of a SWALLOWTAIL BUTTERFLY (*Papilio xuthus*) feeding on leaves of *Triphasia trifoliata* at Kuliouou, Oahu. This is first Hawaiian record on this host. According to literature apparently predominant host on Guam. Two eggs of *P. xuthus* collected from citrus leaves at Foster Village, Oahu parasitized by *Trichogramma* sp. (a trichogrammatid wasp); first record of field parasitism of this pest in Hawaii. Of 62 eggs collected in this area, 43 found parasitized. (Kahale, Kumashiro). Larvae and adults of ORCHID WEEVIL (*Orchidophilus aterrimus*) moderate in backyard collection of *Phalaenopsis* orchid plants; about 15-20 percent of 350 plants severely affected by feeding. Adults trace in small orchid nursery at Aina Haina, Oahu; 7 adults collected from young *Dendrobium* shoots. (Miyahira, Kawamura).

Man and Animals - Trapped 234 VEXANS MOSQUITO (*Aedes vexans nocturnus*) and 2,176 SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) in 54 light traps on Oahu during August. *Aedes* per trap ranged from none to high of 208 at Kahaluu. *Culex* per trap ranged from none to high of 1,000 at Honouliuli. (Mosq. Contr. Br., Dept. of Health).

Beneficial Insects - On Kauai, field examination of Indian rhododendron (*Melastoma malabathricum*) fruits infested 20 and 6 percent respectively at Hanahanapuni and Knudsen Gap by MELASTOMA BORER (*Selca brunella*). (Sugawa).

Miscellaneous Pests - Specimens of GIANT AFRICAN SNAIL (*Achatina fulica*) collected and destroyed numbered 50+ at Kahaluu, Kona, Hawaii during August. Snail activity during most of summer at this site practically nil; poison bait applications initiated. (Yoshioka).

LIGHT TRAP COLLECTIONS

	Temperature F	Precipitation (inches)	Type of trap	[illegible]	[illegible]	[illegible]	[illegible] (wheat head armyworm)	Feltia subterranea (granulate cutworm)	[illegible] (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FLORIDA																							
Gainesville 9/3-9			BL		3			1		2						4						4	
IOWA																							
Napier 8/29-9/7			BL	28			95										57	11	16				
Sutherland 8/24-27			BL	4			21											3	6				
MISSISSIPPI																							
Stoneville 9/3-9	68-94	trace	2BL	6	10			21	11	155						5			3		4	38	4790
MISSOURI (County)																							
Platte 9/4-8			BL	1						13									4		1	4	
NEBRASKA																							
Concord 8/27-9/2			BL	15			30			33					2		120	21	55			5	
North Platte 8/27-9/2			BL	28			1			71					2		10	3					
NEW HAMSPHIRE																							
Lee 9/6			BL	3										1									
NEW JERSEY																							
Evesboro 9/1-7			BL	29						11					19		17	16	104		39	40	
Plainsboro 9/1-7			BL	78						24					9		28	13	346		56	49	
OHIO																							
Reynoldsburg 9/3-8			BL	4						2								1	3				
Wooster 9/3-9			BL	20			87			18							23	14	26		58		2
TENNESSEE (County)																							
Fayette 9/6-10			BL	4				3	11	12						2	1	7		9	1	3	9
Hardeman 9/6-10			BL							4								4		4		5	8
TEXAS																							
Waco 9/3-9			BL	5				78										39	24	138	14	31	160
McLennan and Falls Counties 8/27-9/2			BL	6				58	4	1283								26	62	142	121	175	784
VIRGINIA																							
Montgomery 9/2-8			BL	3						29					5	3	2		7			10	
Warsaw 9/1-8			BL	3						98					6	4	38		3			16	
WISCONSIN																							
Cedar Grove 8/31-9/2			BL	5						244							119	10	24		82		
DeForest 8/31-9/6			BL							4							35	9	8				

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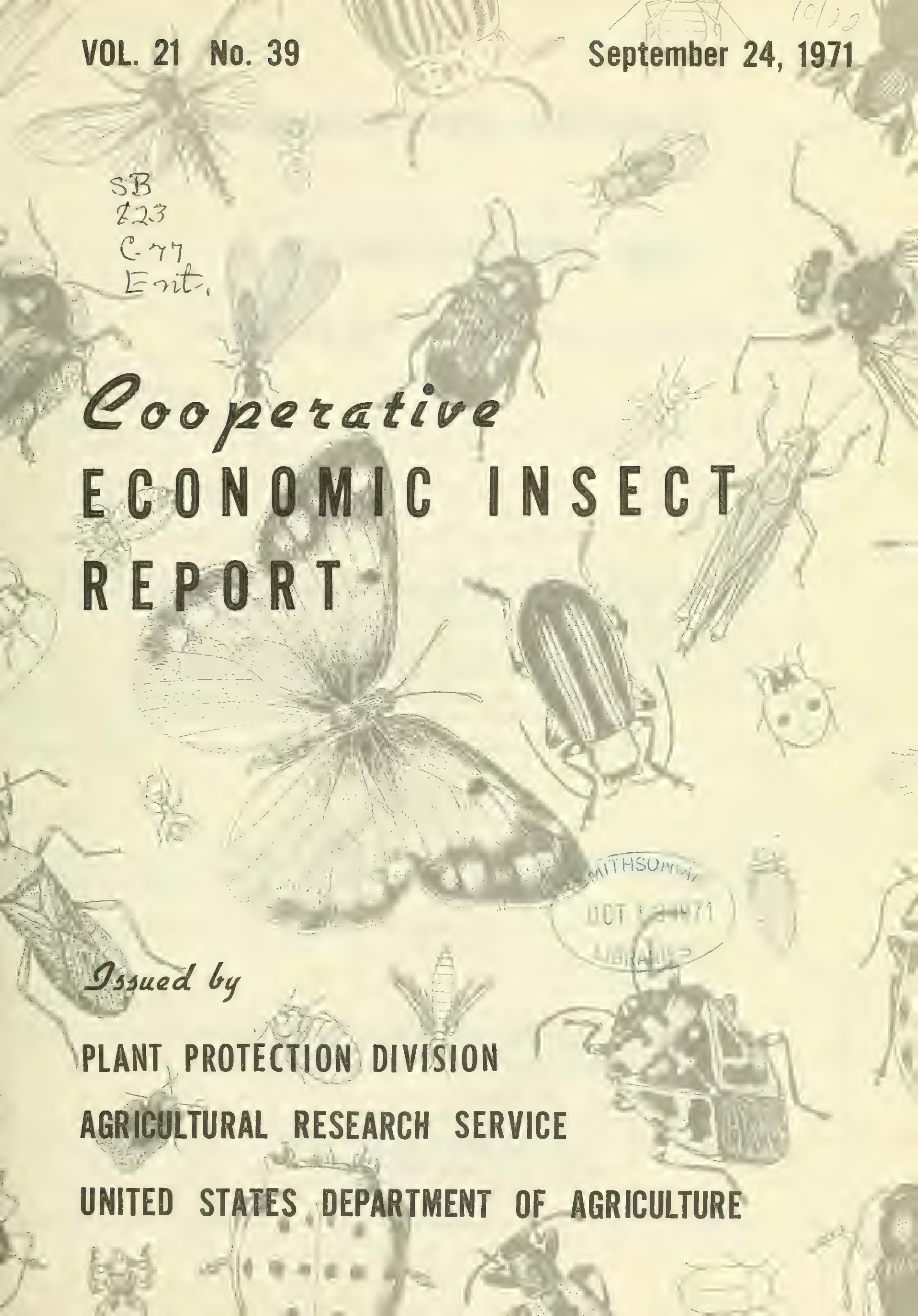

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Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 September 24, 1971 Number 39

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM larvae damaged soybeans in Virginia, South Carolina, and heavy in corn in Kentucky. (p. 679).

BANKS GRASS MITE situation in Trans-Pecos area of Texas (p. 679). Heavy and increasing on sorghum in west Texas. (p. 680).

SORGHUM MIDGE damaged sorghum in Missouri and Oklahoma. (p. 680).

FALL ARMYWORM larvae damaged sorghum in Texas (p. 680). Damaged grasses in Texas, South Carolina, and Oklahoma. Damaged alfalfa in Oklahoma. (p. 681).

MEXICAN BEAN BEETLE damaged soybeans in North Carolina and Virginia. (p. 682).

BOLLWORMS continue to damage cotton in several States. (p. 682).

PINK BOLLWORM heavy in cotton bolls in north-central Texas. (p. 686). Collected 23,437 moths in blacklight trap in McLennan County, Texas.

ORIENTAL FRUIT FLY male trapped in Orange County, California. (p. 686).

Detection

New State records include BARK BEETLES from North Dakota (p. 684), EASTERN PINESHOOT BORER from West Virginia (p. 684), and NORTHERN CORN ROOTWORM from Virginia (p. 680).

For new county and island records see page 689.

Special Reports

Distribution of Mexican Bean Beetle. Map. (p. 690).

Reports in this issue are for week ending September 17 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 20

Reprinted from Weekly and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: The coolest weather of the season came to the Rocky Mountains and parts of the Great Plains. Heaviest rains fell in southern Texas and parts of the Deep South.

PRECIPITATION: Numerous showers and thunderstorms occurred from the Ohio Valley to the Northeast, Monday, September 13. Rain and fog covered New England. Scattered showers and thunderstorms also occurred in southern Texas and in central Florida. A few thunderstorms also dotted the mountains in the Southwest. Elsewhere fair skies persisted. Strong winds downed trees and power lines in Williamsburg, Massachusetts, Monday afternoon. Heavy rains in Philadelphia, Pennsylvania, area Tuesday, caused flash flooding along Chester Creek. Several persons were drowned, dozens injured, and hundreds of families were forced from their homes. Local flooding occurred in Tulsa, Oklahoma, area Tuesday morning after 5.76 inches of rain fell in 6 hours. More heavy rains at Tulsa Thursday, brought the September 1971 total to 13.83 inches, setting a new record for September. The previous record for the entire month is 12.04 inches which fell in September 1936. The september normal is 4.01 inches. Hurricane Edith slammed into the Louisiana coast Thursday, accompanied by heavy rains and a few tornadoes. A tornado at Baton Rouge, Louisiana, shattered glass at a school and damaged several buildings at a shopping center. Showers and thunderstorms occurred Thursday along a front from Oklahoma to New Jersey. At Johnstown, Pennsylvania, winds gusted to 95 m.p.h. accompanied by hail 0.25 inch in diameter. Heavy snow fell along the eastern slope of the Rocky Mountains late in the week. By Friday evening, snow had accumulated to 14 inches at Boulder, Colorado, and by Saturday morning, 15.3 inches had fallen at Denver. Although this is an unusual amount for so early in the season it does not establish a new record. In September 1936, Denver received 19.4 inches of snow in 24 hours. The weight of the snow on trees, which were still in full foliage, at Denver caused considerable limb breakage. The weekend precipitation included scattered amounts from the Rocky Mountains to the Great Plains, light to heavy showers along a front which stretched from Michigan to the lower Mississippi River Valley. Heavy rains in Mississippi from the remnants of Hurricane Edith and light to moderate rains from the Appalachian Mountains to the Atlantic coast.

For continuation of weather of the week and for 30-day forecast, see page 689.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN EARWORM (*Heliothis zea*) - WISCONSIN - Eggs numerous on late sweet corn in southern Marinette County. All plants infested at 2 of 3 locations; eggs averaged 3 per silk. Many eggs hatched on September 14 and first instar larvae in silk channels; some second instar larvae reached ear tips. (Wis. Ins. Sur.). DELAWARE - Adults averaged 35 per night in blacklight traps in Sussex County and larvae heavy on late-planted sweet corn in central Sussex County. (Burbutis, Lesiewicz). MARYLAND - Moths ranged 12-40 per night at Centreville, Queen Annes County. Light (2-3 percent) in soybeans in Wicomico and Worcester Counties. First and second instars light on snap beans in Caroline and Wicomico Counties. (U. Md., Ent. Dept.). VIRGINIA - Damage light in most areas. (Allen). Damage to soybeans occurred in few areas, larvae feeding almost exclusively on pods. (Hofmaster). KENTUCKY - Damaged corn in Fayette County. Larvae ranged 4-5 per ear at one location on late corn. (Barnett). TENNESSEE - Surveys indicate no economic damage to soybeans. (Gordon et al.). SOUTH CAROLINA - Continues to damage soybeans. Numerous larvae diseased. (Thomas). ARKANSAS - Few fields treated in Lafayette County. Danger to soybeans ended for season. Controls applied to fewer fields in 1971 than in previous years. (Boyer). COLORADO - Ear infestations of this species and *Spodoptera frugiperda* (fall armyworm) ranged 0-100 percent (average 40.6 percent) in Arkansas Valley corn. (Schweissing).

GREENBUG (*Schizaphis graminum*) - WASHINGTON - Survey of wheatfields in Benton and Franklin Counties revealed single winged female with young in one Franklin County location. (Klostermeyer). COLORADO - Continues light or none in Arkansas Valley area. Parasitism at 50 percent. Damage most severe in late sorghum. Most sorghum lightly damaged. (Schweissing). TEXAS - Very light in Trans-Pecos area, less than 25 per sorghum plant in most fields. (Neeb).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - COLORADO - Ranged 0-2,000 per 100 sweeps of alfalfa in Arkansas Valley. (Schweissing).

TOBACCO HORNWORM (*Manduca sexta*) - KENTUCKY - Damaged tobacco in Scott and Fayette Counties. Larvae averaged 17 per 20 plants in Clark County and 8 per 50 plants in Fayette County. (Barnett).

CORN, SORGHUM, SUGARCANE

Banks Grass Mite Situation in the Trans-Pecos Area of Texas

Banks grass mite (*Oligonychus pratensis*) has been serious pest in Trans-Pecos area since 1967. Prior to that time present, but could be controlled with most miticides cleared for use on grain sorghum. Control was difficult in Dell City and Ft. Stockton areas in 1969. By 1969, most miticides were ineffective and damage was heavy on grain sorghum in all areas of Trans-Pecos except El Paso Valley.

During 1970, the entire Trans-Pecos area had damage on grain sorghum and silage corn. The El Paso Valley has substantial grain sorghum acreage for first time in 1970. Only a small portion of grain sorghum planted in 1969 in Ft. Stockton area was planted in 1970 because of *O. pratensis*.

The 1971 situation was severe in El Paso Valley, especially on corn for tortilla meal and foliage. Infestations on corn were noted at an earlier stage (pre-tassel); however, previously heavy populations were not noted until post-tassel in corn and after boot stage in grain sorghum. Most of the grain sorghum in El Paso Valley was planted late and *O. pratensis* has moved from corn into grain sorghum. Sorghum fields near corn were most heavily damaged.

This pest has not been a serious problem in Dell City area or Pecos Valley during 1971. Infestations are now present in these areas but rains and cool cloudy weather have apparently slowed population development. (Pate).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - This reporting period counts heavy and increasing on grain sorghum in El Paso, Reeves, and Pecos Counties. Isolated fields in Reeves County show 80-95 percent of total leaf surface desiccated. Few heavily infested fields in Reeves County had sorghum heads completely webbed. (Neeb). OKLAHOMA - Heavy infestations still in scattered grain sorghum in Texas County. (Okla. Coop. Sur.). COLORADO - Declining in most Arkansas Valley areas; many fields show some damage. (Schweissing). WYOMING - Damage continues heavy in many cornfields in Big Horn, Park, Hot Springs, Platte, and Goshen Counties. (Burkhardt).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Adults averaged 12 per night in blacklight trap at Bridgeville, Sussex County, lesser flights elsewhere. About 75 percent of egg masses on sweet corn at Georgetown September 13, parasitized by Trichogramma sp. (a minute egg parasite). (Davis). WEST VIRGINIA - Surveys indicate populations in Cabell, Mason, Putnam, Jackson, and Wood Counties averaged less than one larva per stalk with less than 20 percent infestation. (W. Va. Ins. Sur.). NORTH CAROLINA - Heavy infestation over entire State. Average infestation is about 30 percent. County averages range from 6 percent on stalks infested to 70+ percent. Little lodging has occurred. (Hunt). WISCONSIN - Larvae numerous in individual late sweet corn in southern and northeastern counties. Most larvae in third, fourth, and fifth instars. (Wis. Ins. Sur.). IOWA - Moth flights peaked in Polk County September 11 and in Boone County September 10. Most corn unattractive to third-generation moth egg laying. (Iowa Ins. Sur.). NEBRASKA - Second-generation larval infestations 92-100 percent in Saunders and Dodge Counties. Larvae ranged 250-850 per 100 plants. (Roselle). KANSAS - Percent infested corn plants in 4 fields: Up to 72 percent in Stanton County, up to 28 percent in Finney County, and up to 28 percent in Scott County. No lodging or ear drop noted. Scott and Stanton are new county records. Determined by M.L. Shuman. (Bell).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WEST VIRGINIA - Adults 10-30 per stalk; damage moderate to tassels and silk in Mason County, September 14. Collected by J.D. Hacker. This is a new county record. (W. Va. Ins. Sur.). VIRGINIA - Adults reported from alfalfa field in Floyd County August 19, 1971. Specimens collected on August 27, 1971 from this field. Collected by W.A. Allen. Determined by R.E. White. This is a new State record. (Allen). NEW HAMPSHIRE - Adults on sweet corn silks at Durham, Strafford County. (Morse).

SORGHUM MIDGE (Contarinia sorghicola) - MISSOURI - Damaged late-planted sorghum throughout southeast area. Some very late sorghum will not be harvested. (Munson). OKLAHOMA - Continues heavy in late grain sorghum in Wagoner County. Heavy in few fields in Payne County, light adult populations seen. (Okla. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Up to 80 percent of ears girdled at base in scattered corn in Texas County. (Okla. Coop. Sur.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - WASHINGTON - Heavy in most field corn in central Columbia Basin area. (Klostermeyer).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Heavy in Wilbarger, Wichita, Dickens, Shackelford, Throckmorton, Young, and Baylor Counties. Damage heavy on early planted small grain in some cases. Larvae completely destroyed 40 acres of wheat in Dickens County. (Boring).

WHEAT STEM SAWFLY (Cephus cinctus) - NORTH DAKOTA - Survey of wheat stubble for cutting completed in 12 counties. Cut stems ranged up to 15.7 (averaged 0.8) percent. Slight increase from 0.7 percent in 1970. Cutting evident in 54 percent of fields this year and 52 percent in 1970. (Brandvik, Kaatz).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (*Spodoptera frugiperda*) - SOUTH CAROLINA - Damaged coastal Bermuda grass in Lee and Marlboro Counties. (Nettles). TEXAS - All south-central area counties surrounding Gonzales reported economic damage to pastureland. In College Station area, Brazos County, larvae heavy on coastal Bermuda grass. (Cole et al.). OKLAHOMA - Heavily damaged new Bermuda grass lawns in Kay County. Some lawn damage in Payne County. (Okla. Coop. Sur.).

CHINCH BUGS (*Blissus* spp.) - PENNSYLVANIA - Adults and nymphs of *B. leucopterus leucopterus* (chinch bug) damaged lawns in Centre County. (Adams). OHIO - Adults and nymphs of *B. leucopterus hirtus* (hairy chinch bug) 150+ per square foot in lawns in Wayne County. (Niemczyk).

TWOLINED SPITTLEBUG (*Prosapia bicincta*) - ALABAMA - Adults and nymphs heavy in western Monroe County in Bermuda grass fields. Controls applied. (Lemons, Smith). Heavy and damaging large coastal Bermuda grass field in Dale County. Damaged some fields in Barbour County. (Estes, Walton).

FORAGE LEGUMES

ALFALFA CATERPILLAR (*Colias eurytheme*) - NEVADA - Ranged 4-5 per sweep of alfalfa in Reese River Valley, Lander County, hay fields. (Hilbig). NEW MEXICO - Larvae ranged 8-15 per 25 sweeps of alfalfa near Roswell, Chaves County. (Mathews).

FALL ARMYWORM (*Spodoptera frugiperda*) - ARIZONA - Larvae 360 per 100 sweeps of alfalfa in north Gila Valley, Yuma County. (Ariz. Coop. Sur.). OKLAHOMA - Larvae destroyed some alfalfa seedling fields in Garfield County. Heavy in Atoka County. (Okla. Coop. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Larvae per 100 sweeps of alfalfa in Yuma County: North Gila Valley 1,320 and Yuma Valley 60. (Ariz. Coop. Sur.).

WESTERN YELLOWSTRIPED ARMYWORM (*Spodoptera praefica*) - IDAHO - Larvae damaged alfalfa, sugarbeets, and other crops in Canyon, Elmore, Owyhee, Payette, and Washington Counties. Control needed in many cases. (Homan). NEVADA - Small larvae medium on alfalfa in Mason and Smith Valleys, Lyon County. (Batchelder). Occasional larva in hayfields in Reese River Valley, Lander County. (Hilbig).

THREECORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: North Gila Valley 600, south Gila Valley 190, Yuma Mesa 340, and Yuma Valley 840. (Ariz. Coop. Sur.). MISSOURI - Adults ranged 2-18 per 10 sweeps of alfalfa in southeastern area. Discoloration of girdled plants appearing in extreme southeast counties. (Munson).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - KENTUCKY - Adults averaged 320 per 100 sweeps of alfalfa in Madison County. (Barnett).

A LYGUS BUG (*Lygus* sp.) - COLORADO - Ranged 0-800 per 100 sweeps of alfalfa in Arkansas Valley. Potential to become economic on seed field exists. (Schweissing).

PEA APHID (*Acyrthosiphon pisum*) - NEW MEXICO - Increased in Chaves County alfalfa. Ranged from 40 to 500+ per 25 sweeps in fields checked. (Mathews). Light in alfalfa in southern Dona Ana County. (Riddle).

ALFALFA WEEVIL (*Hypera postica*) - ARIZONA - Collected on alfalfa by J. May in Coconino County at Fredonia May 27. This is a new county record. Determined by R.E. Warner. (Ariz. Coop. Sur.).

SOYBEANS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NORTH CAROLINA - Foliage loss 50+ percent in Pasquotank County. Populations increased throughout Coastal Plains. Defoliation 15 percent in Scotland County. (Westcott et al.). VIRGINIA - Controls underway in Tidewater areas, especially south of Rappahannock River. Reports of 10-acre field with near 100 percent defoliation in Nansemond County. Adults increased to outbreak proportions in Accomac and Northampton Counties. (Allen).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MISSISSIPPI - Adults averaged 15 per linear foot in Lowndes County field. Averaged 6 per linear foot in Monroe County field. (Robinson).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - FLORIDA - Increased on unsprayed soybeans at Quincy, Gadsden County; small larvae 4 per row foot; many commercial fields treated near Quincy, September 7. (Greene); all stages but mostly smaller larvae 8 per row foot (second week at this level) on unsprayed soybeans near Gainesville, Alachua County. (Whitcomb).

COTTON

BOLLWORMS (*Heliothis* spp.) - ARIZONA - Many fields treated for *H. zea* in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). TEXAS - In El Paso County, less than 4 percent *H. zea* infestations in unsprayed fields. In Reeves County, 2-5 percent with heavier infestations in sprayed fields. In Midland, Glasscock, and Martin Counties, less than 2 percent. In Pecos County, 2-6 percent infestations. Increase noted in isolated fields in Bakersfield area of Pecos County. Eggs increased in terminals of late-planted cotton. Eggs ranged 20-55 per 100 terminals in these fields. (Neeb). OKLAHOMA - *H. zea* damage averaged 30 percent in Marshall County and ranged 5-7 percent in Tillman County. Moderate in Bryan County and light in Payne County. (Okla. Coop. Sur.). TENNESSEE - *H. zea* larvae caused damage throughout western areas. (Locke). ARKANSAS - Of 3,265 specimens collected on cotton, 75 or 2.14 percent determined *H. virescens*. This species averaged 5.1 percent for previous 10 years. *H. virescens* relatively heavy in certain spots. *Heliothis* spp. populations remain heavy in some cotton in southwest areas. (Boyer).

BOLL WEEVIL (*Anthonomus grandis*) - TENNESSEE - Damage heavy to late cotton in western areas. No damage noted in early cotton. (Locke). TEXAS - Remained light in Glasscock, Midland, and Martin Counties. Punctured squares averaged 5 percent in Glasscock County. Averaged less than 5 percent in Midland and Martin Counties. Heavy in parts of Nolan County. Heavy in Wichita, Wilbarger, and Fisher Counties. (Neeb, Boring). OKLAHOMA - Punctured squares averaged 30 percent in Marshall County and 20 percent in Tillman County. (Okla. Coop. Sur.).

SUGAR BEETS

SPINACH LEAFMINER (*Pegomya hyoscyami*) - WYOMING - Late generation infested 0-50 percent of sugar beet plants in several fields near Powell, Park County. (Murray).

POTATOES, TOMATOES, PEPPERS

TOMATO FRUITWORM (*Heliothis zea*) - COLORADO - Moths increased in light trap. Egg counts 1 per 300 tomato leaves in Arkansas Valley. (Schweissing). UTAH - Infestation light in northern and central area tomato fields. (Knowlton). NEW MEXICO - Damaged fruit in Berino area, Dona Ana County; about 1 out of 5 ripening tomatoes damaged. (Riddle).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - DELAWARE - Larval infestation of sweet peppers averages 42 percent. Third-generation larvae present in 33 percent of infested fruit. No fresh egg masses found on September 15 in northwestern Sussex County. (Burbutis, Lesiewicz). WISCONSIN - Damaged 5 acres of peppers in Walworth County. (Wis. Ins. Sur.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - OHIO - Larvae 14 and adults 5 per lima bean plant in Licking County. (Andress).

DECIDUOUS FRUITS AND NUTS

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Damaging populations still on pecans in untreated orchards in Clay, Lowndes, and Montgomery Counties. (Cowan et al.). NORTH CAROLINA - Infestations in pecan and walnut trees east of Winston Salem, heavier than usual; 20 webs per tree are common. Damage occurring in mountain sourwoods and persimmons; webs are about one half as many as in Piedmont and Coastal Plains. (Johnson et al.). OKLAHOMA - Heavy on pecan, walnut, and persimmon in Garvin County and scattered areas of McClain, Cleveland, Oklahoma, and Logan Counties. (Okla. Coop. Sur.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Damage heavy on pecans in Young and Wichita Counties. (Boring). OKLAHOMA - Adults emerging in pecan groves in Rogers County. Larvae emerging from early maturing nuts in Payne County. Light to moderate in Cleveland County. (Okla. Coop. Sur.). ALABAMA - Adults appeared three weeks ago in commercial groves in Monroe County; currently controls applied. (Lemons). Still damaging in many orchards in Covington and Lowndes Counties. (Linder, Gerald).

TWOMARKED TREEHOPPER (Enchenopa binotata) - PENNSYLVANIA - Adult oviposition abundant on English walnut trees in Blair County. (Gesell).

WALNUT CATERPILLAR (Datana integerrima) - KANSAS - Defoliation moderate to heavy to black walnuts in grove in Riley County. Currently clustering on trunks of trees. (Bell). OKLAHOMA - Second-generation larvae heavy on pecans in Payne, Coal, and Atoka Counties. Larvae mostly last or next to last instars in most areas. (Okla. Coop. Sur.).

SPIDER MITES - UTAH - Tetranychus spp. caused serious injury to apple foliage in some Moab, Grand County orchards, and moderate to severe injury at Blanding, San Juan County. (Jones). MASSACHUSETTS - Panonychus ulmi (European red mite) and Tetranychus urticae (twospotted spider mite) 109 and 20, respectively, per 100 leaves on treated apple trees in Hampshire County. (Blyth, Jensen).

CODLING MOTH (Laspeyresia pomonella) - UTAH - Light to moderate damage in Grand and San Juan Counties and some northern area apple and pear orchards. (Jones, Knowlton).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - IOWA - Single late instar larva collected in peach fruit at Ankeny, Polk County, September 12. This is a new county record. (Iowa Ins. Sur.).

ORNAMENTALS

A LACE BUG (Stephanitis takeyai) - PENNSYLVANIA - Adults abundant on Hinodegeri azalea in Dublin Township, Bucks County. (Christie). New host variety record. Adults collected on Pieris in Allentown, Lehigh County, September 10 by T. Wolf. Determined by E. Simons. This is a new county record. (Kim).

SMALL FRUITS

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Larvae defoliated small fruit in yard plantings in Safford and Salt River Valley, Graham and Maricopa Counties. (Ariz. Coop. Sur.).

FOREST AND SHADE TREES

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Infesting single trees, saplings, and young saw timber ponderosa pine trees in 50-acre stand. About 20 trees killed in West Grider Creek area, Klamath National Forest. (McMurtrey USFS).

PINE ENGRAVER (Ips pini) - ARIZONA - Forest Service annual aerial insect detection survey shows increase in "red top" Ponderosa Pine. Forests showing heaviest damage Coronado, Tonto, and Sitgreaves. (Ariz. Coop. Sur.).

A BARK BEETLE (Pseudopityophthorus pruinosus) - WEST VIRGINIA - Adults collected from oak trees affected with oak wilt disease in Hampshire, Mineral, Grant, Hardy, Lincoln, Fayette, and Wayne Counties. Collected and determined by C.O. Rexrode, March, 1971. These are new county records. (W. Va., Ins. Sur.).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - MISSOURI - Adults collected in Ste. Genevieve and Bollinger Counties. These are new county records. (Munson).

A BARK BEETLE (Chaetophloeus heterodoxus) - NORTH DAKOTA - Adults collected from chokecherry in McHenry County by A.D. Tagestad on March 28, 1971. Determined by S.L. Wood. This is a new State record. (Stein).

A BARK BEETLE (Phloeotribus dentifrons) - NORTH DAKOTA - Adults collected from hackberry in McHenry County by A.D. Tagestad on May 17, 1971. Determined by S.L. Wood. This is a new State record. (Stein).

ELM LEAF BEETLE (Pyrrhalta luteola) - IDAHO - Last instar larvae feeding in Coeur d'Alene, Kootenai County. (Stranahan). First report of severe larvae activity north of Lewiston, Nez Perce County. (Portman). IOWA - Specimens taken in Carroll County September 13 and Story County September 17 for new county records. (Iowa Ins. Sur.).

ALDER FLEA BEETLE (Altica ambiens) - CALIFORNIA - Defoliating about 2 acres of alder along Indian Creek in Happy Camp area, Siskiyou County, Klamath National Forest. (Waldapfel USFS).

EASTERN PINESHOOT BORER (Eucosma gloriola) - WEST VIRGINIA - Larval damage light to Scotch pine in Mineral County. Collected by D. Eskridge, June 24, 1971. Determined by D.M. Weisman. This is a new State record. (W. Va., Ins. Sur.). Also recorded from New York, Pennsylvania, and Connecticut. (PPD).

SEQUOIA PITCH MOTH (Vespamima sequoiae) - CALIFORNIA - Larvae and pupae heavy in twigs, bark, and on trunks of Pinus radiata in Natural Bridges State Park in Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

AMERICAN DAGGER MOTH (Acronicta americana) - NEVADA - Light to medium infestations on boxelder at Genoa, Douglas County, and Reno, Washoe County. (Hilbig, Lauderdale et al.).

FALL WEBWORM (Hyphantria cunea) - OHIO - Larvae observed on black cherry, black walnut, and other tree species in Tuscarawas, Carroll, Columbiana, and Jefferson Counties. Populations heavy. (Riddle). TENNESSEE - Second-generation larvae damaged pecan, walnut, and other trees throughout State. (Gordon). CALIFORNIA - Larvae building up on madrone trees along Klamath River from Happy Camp to Oak Knoll in Siskiyou County. (Dirckson USFS).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Scattered moderate to heavy infestations on mimosa in Pauls Valley, Garvin County, Purcell, McClain County, and Norman, Cleveland County. Light in Guthrie, Logan County. These are new county records. (Okla. Coop. Sur.).

WALKINGSTICK (*Diapheromera femorata*) - OHIO - Heavy in and around Perry County reclamation area. Infestation that defoliated 1,000+ acres in same area in 1970 caused extensive mortality to pure stands of black locust this year. (Guy, Ehlers).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 36 cases reported in U.S. September 5-11 as follows: TEXAS - Brewster 1, Crockett 1, Dimmit 1, Edwards 2, Hidalgo 1, Kinney 8, Maverick 1, Pecos 1, Presidio 1, Val Verde 11, Zavala 1, Bowie 1, Lampasas 1, and San Saba 3; ARKANSAS - Miller 1. Reported 31 cases September 12-18 as follows: TEXAS - Bexar 1, Brewster 1, Crockett 1, Edwards 1, Kinney 3, Pecos 5, Presidio 1, Val Verde 6, Bowie 1, Gillespie 1, Irion 2, Lampasas 3, San Saba 3, and Sutton 1; ARKANSAS - Little River 1. Total of 354 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 9, Chihuahua 166, Coahuila 97, Nuevo Leon 30, Tamaulipas 52. Total of 64 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 55,388,000; Arkansas 1,960,000; Arizona 6,330,000; Mexico 91,228,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - NEBRASKA - Averaged 400 per animal in Keith and Lincoln Counties. (Campbell). TEXAS - Heavy on cattle from several counties in Trans-Pecos area. Heavy in Shackelford County. (Neeb, Boring). OKLAHOMA - Ranged 850-1,000 per head on cattle early in week in Payne County and 250-400 on same cattle after cool weather. (Okla. Coop. Sur.). MISSISSIPPI - Light to moderate (200-500 per animal) on cattle in Oktibbeha, Lee, and Monroe Counties. (Robinson).

FACE FLY (*Musca autumnalis*) - MARYLAND - Ranged 10-24 per head of cattle in Montgomery, Prince Georges, and Howard Counties. (U. Md., Ent. Dept.). SOUTH DAKOTA - Light on livestock checked at higher elevations in Black Hills in Lawrence County. Averaged 2 per head of stock in southeast area near Nemo, during week ending September 12. This is a new county record. (Jones). NEBRASKA - Counts decreasing; averaged 5 per face near North Platte, Lincoln County. (Campbell). UTAH - Taken at Scipio, Millard County, for a new County record. (Hanson). Troublesome to horses and cattle in Cache, Box Elder, Weber, and Davis County farm areas. (Knowlton).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Light to moderate annoyance to cattle in Chippewa, Outagamie, Rock, and Calumet Counties. Severe annoyance in portions of Columbia and Walworth Counties. (Wis. Ins. Sur.). NEBRASKA - Decreasing in feedlots. Five per leg average. Lincoln County. (Campbell).

MOSQUITOES - MINNESOTA - Collected 4,470 females during week ending September 10 in light traps. *Aedes vexans* accounted for 88 percent of total, *Culiseta morsitans* 2.6 percent, *C. inornata* 1 percent, *Anopheles walkeri* 1.9, and *Culex tarsalis* 0.5. (Minn. Pest Rpt.).

A SOFTBACKED TICK (*Ornithodoros concanensis*) - CALIFORNIA - Adults medium at San Leandro, Alameda County. Bite very painful. (Cal. Coop. Rpt.).

HOUSEHOLDS AND STRUCTURES

A DRYWOOD TERMITE (*Kalotermes approximatus*) - FLORIDA - Winged reproductives present in dead, live oak stump (*Quercus virginiana*) at Gainesville, Alachua County September 6. Earlier than usual October and November season for winged reproductives. (Hetrick).

SMOKYBROWN COCKROACH (*Periplaneta fuliginosa*) - CALIFORNIA - Adults infested residence at 20 per square yard in Concord, Contra Costa County. Not known to occur in State other than this infestation, and eradication treatment underway. (Cal. Coop. Rpt.).

A POWDERPOST BEETLE (Lyctus africanus) - ARKANSAS - Intercepted from wooden crates shipped from India. All materials destroyed. (Boyer).

BENEFICIAL INSECTS

LADY BEETLES - COLORADO - These and Nabis spp. (damsel bugs) increased in many alfalfa fields in Arkansas Valley to as much as 600 and 300 per 100 sweeps, respectively. Heavier counts associated with definite decline in aphid populations. (Schweissing).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - During period September 10-16, about half of sixth treatment complete at Brownsville, Cameron County. Rain hindered control efforts. Surveys in control zone showed single citrus tree with larvae, pupae, and pupal cases; another tree leaf with larvae and pupal cases. (PPD).

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - Emergence heavy in Blaine area; adults reported at Bellingham. Predation of mating adults by carabid and staphylinid beetles noted at residence in Blaine, Whatcom County. Infestation appears to be lighter than 1970; adult emergence apparently peaked. (Jackson).

GRASSHOPPERS - WASHINGTON - Adult survey for 1971 indicated total of 32,200 acres of rangeland, in 11 counties, with infestation at levels to cause economic damage. Heaviest counts in Asotin, Whitman, Yakima, and Columbia Counties. (Jackson, Nonini). MONTANA - Melanoplus sanguinipes ranged 10-20 per square yard on 30,000-50,000 acres between Eureka, Lincoln County, and Canadian border. (Cowan). SOUTH DAKOTA - Adult survey indicated that threatening to severe infestations existed on 526,000 acres of cropland. Totaled 145,000 acres more than in 1970. Most of increase in acreage noted in West River area; in 1970, classed as noneconomic. On rangeland this year 47,000 acres classed light, 17,700 acres threatening to severe infestation. (PPD).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single male taken in trap in yard at Garden Grove, Orange County on September 8 by K. Reese. Determined by G. Okumura. This location near where flies trapped in 1970 in Los Alamitos Naval grounds. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - TENNESSEE - All trapping has been negative. (PPD). TEXAS - Infestations heavy in north-central area. Heavy in bolls in Collin, Delta, and Rockwall Counties. Other infestations reported from Hill, Navarro, Ellis, Kaufman, and Dallas Counties. Light, scattered infestations in Pecos Valley; ranged 1-3 percent infested bolls. Ranged 15-35 percent infested bolls in isolated fields near Coyanosa, Pecos County. Light, averaged less than 3 percent infested bolls in El Paso, Reeves, Midland, Glasscock, and Reagan Counties. Pecos Experiment Station farm in Reeves County reported 3 percent infested bolls. (Turney, Neeb). ARIZONA - Building up in all areas at Safford, Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Collected 19 moths in 10 hexalure traps on August 30, at Carlsbad, Eddy County. (Mathews).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Inspection east of Balboa Park revealed 95 properties with 267 infested trees at San Diego, San Diego County. Twenty-one parasite release sites located in this area. Some parasite activity now appearing in older release sites in San Diego. (Cal. Coop. Rpt.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Larvae began pupating in Lincoln County September 6-11. Drought conditions exist in most of infested area. (N.M. Coop. Rpt.).

WHITEFRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Adults numerous in many soybean fields in Frisco City and Uriah area of Monroe County; several growers applied controls due to adult feeding on leaves. Abundant in scattered fields around Chatom in Washington County. Collected 200+ adults in one hour. TENNESSEE - Adults ranged 2-10 per hill in 3 soybean fields in Crockett County; some evidence of larval damage. (Gordon).

HAWAII INSECT REPORT

General Vegetables - All stages of BEAN FLY (*Melanagromyza phaseoli*) moderate in 0.2 acre planting of snap beans at Waiahole, Oahu. On Maui, infested yardlongbean material collected from Puunene and Waikapu revealed 100 and 57 percent parasitism by *Opius* spp. (braconids). *M. phaseoli* infested about 1 percent of host petioles at lower elevations, where activity has been light. Parasitism averaged 87 (ranged 68-100) percent mostly by *Opius* spp. from infested cowpea and snap bean material collected from various areas on Kauai. (Funasaki et al.). BEET ARMYWORM (*Spodoptera exigua*) generally trace to light in fields of green onion at Koko Head and Waimanalo, Oahu; averaged less than one larva per 4 plants. (Funasaki). Adults of a PLANT BUG (*Cyrtopeltis modestus*) light, 4 per plant, in small backyard planting of tomato at Ewa, Oahu. (Au).

Fruits and Nuts - AN ARMORED SCALE (*Pinnaspis buxi*) heavy on 5 coconut trees at Lahaina, Maui; several hundred per leaflet, few with as many as 300 per square inch. (Ah Sam, Miyahira).

Ornamentals - Several adults of a LYGAEID BUG (*Neacoryphus bicrucis*) intercepted at Honolulu on *Plumeria* and *Bougainvillea* flowers. This is a new host record in Hawaii, first reported in State May 1971. Collected 40+ adults from small planting of farfugium (*Ligularia tussilaginea*) at Manoa, Oahu. (Shiroma, Kawamura).

General Pests - Collected 2 adults of a STINK BUG (*Plautia stali*) from oplopua (*Osmanthus sandwicensis*) at Kawela Gulch, Molokai for a new island record. First reported in March 1968 on Oahu. (Gagne). Nymphs and/or adults of a TREEHOPPER (*Vanduzea segmentata*) moderate ranged 3-10 per infested terminal on 70 percent of terminals in small planting of naupaka (*Scaevola servicea*) at Kahala, Oahu. Trace in beach side planting of same host at Kaaawa, less than one per 50 terminals. (Kawamura).

Beneficial Insects - Percentage internodes of *Tribulus terrestris* and *T. cistoides* infested or damaged by PUNCTUREVINE STEM WEEVIL (*Microtarinus lypriformis*): 100 and 79 at Kihei (89 internodes checked), none and 2 at Lahaina (134 internodes checked), respectively. Infested 89 percent of 59 internodes at Puunene, Maui. (Miyahira).

DETECTION

New State Records - A BARK BEETLE (*Chaetophloeus heterodoxus*) NORTH DAKOTA - McHenry County. A BARK BEETLE (*Phloetribus dentifrons*) NORTH DAKOTA - McHenry County. (p. 684). EASTERN PINESHOOT BORER (*Eucosma gloriola*) WEST VIRGINIA - Mineral County. (p. 684). NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) VIRGINIA - Floyd County. (p. 680).

New County and Island Records - ALFALFA WEEVIL (*Hypera postica*) ARIZONA - Coconino (p. 681). ASIATIC OAK WEEVIL (*Cyrtepistomus castaneus*) MISSOURI - Ste. Genevieve, Bollinger (p. 684). A BARK BEETLE (*Pseudopityophthorus pruinosus*) WEST VIRGINIA - Hampshire, Mineral, Grant, Hardy, Lincoln, Fayette, Wayne (p. 684). ELM LEAF BEETLE (*Pyrrhalta luteola*) IOWA - Carroll, Story (p. 684). EUROPEAN CORN BORER (*Ostrinia nubilalis*) KANSAS - Stanton, Scott (p. 680). FACE FLY (*Musca autumnalis*) SOUTH DAKOTA - Lawrence (p. 685). UTAH - Millard (p. 685). A LACE BUG (*Stephanitis takeyai*) PENNSYLVANIA - Lehigh (p. 683). MIMOSA WEBWORM (*Homadaula anisocentra*) OKLAHOMA - McClain, Cleveland, Logan (p. 684). NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) WEST VIRGINIA - Mason (p. 680). ORIENTAL FRUIT MOTH (*Grapholitha molesta*) IOWA - Polk (p. 683). A STINK BUG (*Plautia stali*) HAWAII - Molokai (p. 687).

CORRECTIONS

CEIR 21(37):656, 664 - EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Delete note on page 656 and delete new county record on page 664. Specimens misidentified. (McQueen).

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-SEPTEMBER TO MID-OCTOBER 1971

The National Weather Service's 30-day outlook for mid-September to mid-October is for temperatures to average below seasonal normals from the Rockies to the Great Lakes and the southern Appalachians. Above normal averages are indicated for the Northeast and also west of the Rockies. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal over the eastern quarter of the Nation and along the west gulf coast. Subnormal totals are indicated west of the Divide and in portions of the central and southern Plains. Elsewhere near normal precipitation is expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

Weather of the week continued from page 678.

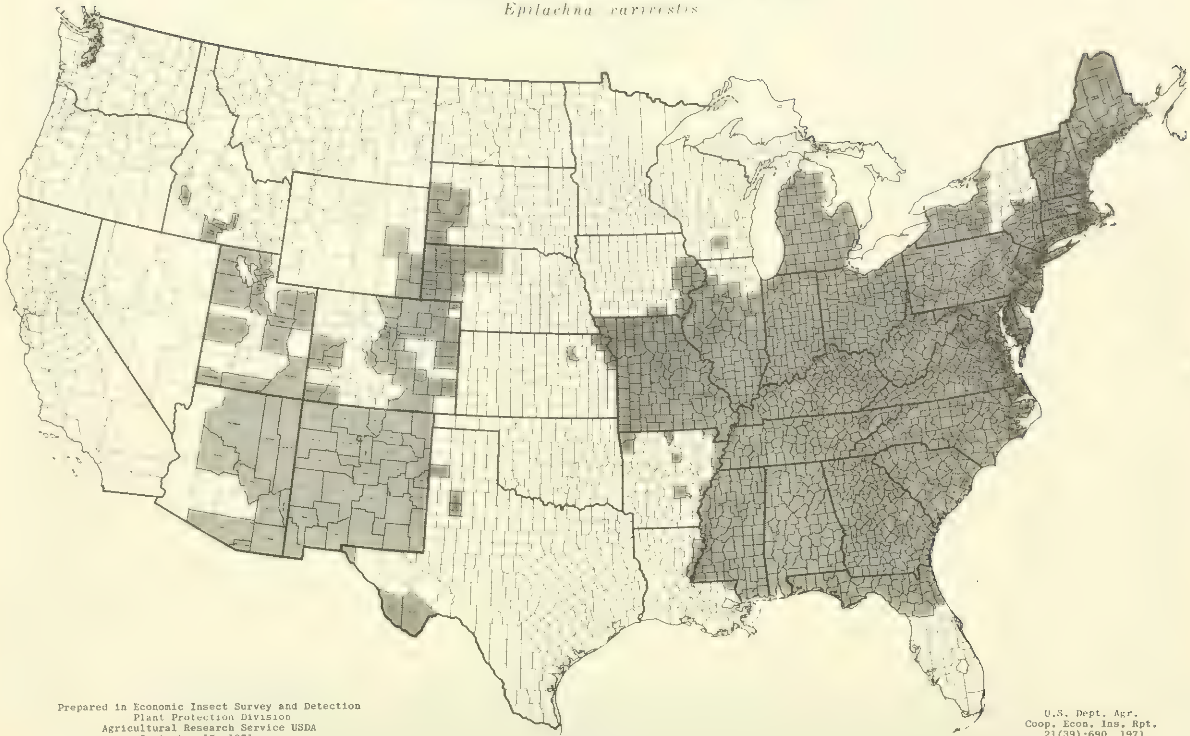
TEMPERATURE: Hot summer weather prevailed over mid-America early in the week. Polar air pushed into the northern Rocky Mountains and the northern Great Plains dropping temperatures sharply. Valentine, Nebraska, warmed to 95° Monday, but no higher than 65° Tuesday. By Thursday morning, subfreezing temperatures occurred in spots from Oregon to the Dakotas and as far south as Alamosa, Colorado, where 28° occurred. Big Piney, Wyoming, registered 19° Thursday morning. The maximum temperatures remained in the 50's and 60's from the Dakotas to Upper Michigan Wednesday and Thursday. The Deep South had remained hot and humid until Wednesday, when Jackson, Mississippi, registered 89° and the highest temperature at Jackson Thursday was 72°. The Far Southwest continued hot with temperatures reaching 100° or higher every afternoon. Imperial and Blythe in California recorded 113° Tuesday afternoon. San Francisco, California, registered 103° Tuesday. This is the warmest September temperature of record for San Francisco. A large high centered over the northern Great Plains brought the coldest weather of the season to much of the Great Plains. Temperature at Denver, Colorado, climbed to only 35° in the warmest part of the day Friday. On Sunday morning the mercury at Leadville, Colorado, plunged to 90°. The weekly average temperatures over much of the Rocky Mountains and central Great Plains were 10° to 15° below normal. In contrast, spots in the San Joaquin Valley in California averaged 15° warmer than normal.

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap (BL = blacklight I = incandescent MV = mercury vapor O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 9/10-16			BL	1	2			3	3	19						1			16	1		11		
KANSAS																								
Great Bend 9/2-8			BL	19			15			28					5			12	113			28		
Tribune 9/3			BL				6			78								16	14			13		
KENTUCKY																								
Monticello 9/11, 14			BL							9									1			1		
MISSISSIPPI																								
Stoneville 9/10-16	61-94	0.45	2BL	8				8	11	387									4	58	11	17	14987	
MISSOURI (County)																								
Platte 9/9-15			BL	7						22						2	10	12	21		9	11		
NEW HAMPSHIRE																								
Lee 9/13			BL	3						2												5	3	
Newington 9/10			BL	3						1														
NEW JERSEY																								
Cedarville 9/8-14			BL	23						112					25		11	8	84		8	17	44	
Plainsboro 9/8-14			BL	26						102					11		6	44	220		82	10	54	
OHIO																								
Reynoldsburg 9/8-15			BL	2						11								4	4					
Wooster 9/11-17			BL	26			63			67							12	16	42		133	5	48	
PENNSYLVANIA (County)																								
Centre 9/10			BL	2						6					1				1					
TENNESSEE (County)																								
Fayette 9/13-17			BL	52	1			1	52	128					1	6	30	6	98	6	2	35	196	
Hardeman 9/13-17			BL	11					1	79						2	9	2	27	2		23	244	
TEXAS																								
Waco 9/8-16			BL	21				85										53	50	390	61	81	877	
VIRGINIA																								
Holland 8/31-9/10			BL	2					1	157					4		49		16			32		
Warsaw 9/9-15			BL						1	63					7		6		1			9		
WISCONSIN																								
DeForest 9/7-13			BL							38							10		8					
Lancaster 9/8-14			BL	1						22							7	2	3					

Distribution of Mexican Bean Beetle

Epilachna varivestis



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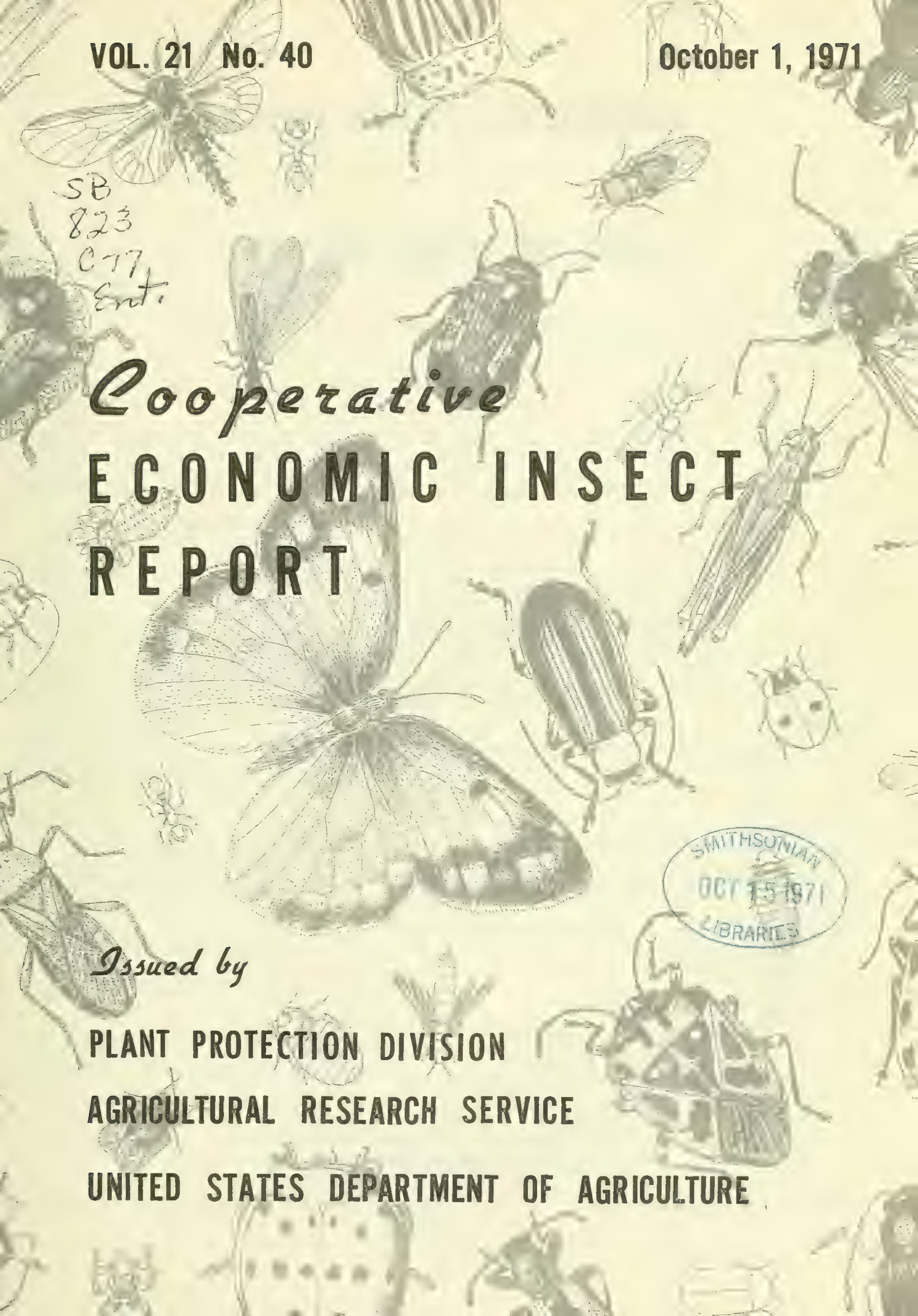

Cooperative
ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Protection Division, ARS, USDA
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Hyattsville, Maryland 20782

Volume 21 October 1, 1971 Number 40

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM larvae damaged corn in Tennessee and soybeans in Virginia. (p. 693).

EUROPEAN CORN BORER damaged corn in North Carolina, milo in Virginia, and heavy on corn in Nebraska. Damaged peppers in Delaware. (pp. 693, 696).

BANKS GRASS MITE heavy on sorghum in western Texas. (p. 694).

FALL ARMYWORM larvae heavy in small grains in Oklahoma and Kansas. Heavy in grasses and alfalfa in Oklahoma. (p. 694).

HESSIAN FLY loss to small grain estimated at 227,757 bushels in Nebraska. (p. 694).

MEXICAN BEAN BEETLE adults and larvae damaged soybeans in portion of Maryland, expect heavy overwintering populations in area. Increased in eastern Virginia. (p. 695).

PINK BOLLWORM continues heavy in cotton bolls in west-central and north-central Texas. (p. 699).

BOLL WEEVIL populations in Texas High Plains have been very light compared to populations in 1970. Total of 68,000 acres treated this year through third application compared to 390,000 acres during same period in 1970.

Detection

● A PTEROMALID WASP reported for the first time from Nebraska. This is a new North American record. Recorded from Europe and England. This wasp is a hyperparasite of Bathyplectes spp. which is a larval parasite of alfalfa weevil. (p. 699).

New State records include SAGEBRUSH DEFOLIATOR from Montana (p. 694) and BEAN APHID from Oklahoma (p. 696).

For new county records see page 700.

Special Report

Distribution of Plum Curculio. Map. (p. 702).

Reports in this issue are for week ending September 17 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 27

Reprinted from Weekly and Crop Bulletin supplied by Environomental Data Service, NOAA.

HIGHLIGHTS: Cool autumn temperatures prevailed over most of the nation. The heaviest rains fell in northern Texas.

PRECIPITATION: Light snow fell over the northern Rocky Mountains and the northern Great Plains Monday, September 20. Four inches fell at Harrison in the Nebraska Panhandle Tuesday morning. Snow-slicked passes across the Rockies and gusty winds accompanying snow made driving hazardous. Cold rain fell from the Great Lakes to the Gulf of Mexico and scattered showers and thunderstorms occurred farther east. Weekend rains fell in the central and southern Great Plains and eastward to the Atlantic Ocean. They were most generous over northern and central Texas Friday and Saturday and from northern Missouri to western Pennsylvania Saturday and Sunday. Light rain fell from the northern Pacific coast to the Rocky Mountains Saturday. Weekly totals were less than 1 inch over most of the Nation. Areas where more than 1 inch fell included northern Texas, Oklahoma, southeastern Kansas, northern Missouri, and central Illinois, and from extreme southern Michigan to central Tennessee and West Virginia. Parts of northern Texas received more than 2 inches.

TEMPERATURE: A high pressure area centered over the southern Great Plains brought the coolest temperature of record for so early in the autumn to spots in Arizona, New Mexico, Oklahoma, and western Texas. Among stations to register a record low for so early in the season, Monday morning September 20, were Flagstaff, Arizona, 23° and Lubbock, Texas, 41°. Another blast of arctic air pushed into the Northern Great Plains Monday afternoon. The Pacific Coast States remained in the comfortable 90's and 80's. The Far South West continued hot. Thermal, California, registered 99° Wednesday afternoon. There was lots of sunshine in Florida where the mercury at Orlando climbed to 93° Tuesday afternoon. A cool air surge kept the afternoon temperatures in the 50's and 60's from the Northern Great Plains to New England over the weekend. Clouds held maximums in the 80's across the Deep South. The Far Southwest continued sunny and hot. The Northwest was damp and chilly. The weekly mean temperatures were below normal except in the extreme Southeast. Parts of northern Texas averaged more than 12° cooler than normal.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Estimated 200,000 acres to be treated in October in San Joaquin Valley from Kern to Merced County. Nymphs increased in most areas. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults averaged 16 per night in blacklight traps and infestations in untreated sweet pepper averaged less than 1 percent in Sussex County. (Burbutis, Lesiewicz). VIRGINIA - Heavy in milo throughout Isle of Wight County. (Goerger). Damage 10-20 percent in soybeans east of City of Richmond. Damage confined to beans planted after July 1. Most larvae late instars and controls difficult. (Allen). NORTH CAROLINA - Critical period ended for all but very late soybeans in southern and central portion of State. Late fields in northern counties and especially counties northeast of Martin County should be watched for fresh pod damage. (Hunt). TENNESSEE - Infested and damaged 99 percent of ears of late corn surveyed in Franklin County. (Cagle). UTAH - Injury light to sweet corn in northern and central areas. (Knowlton, Duncan).

GREENBUG (Schizaphis graminum) - WASHINGTON - General and scattered, averaged less than 5 per linear foot on fall wheat in Benton, Yakima, and Franklin Counties. Infestations light to moderate on about 200 acres of sorghum in several locations north of Pasco in Franklin County. (Klostermeyer). TEXAS - Light on wheat in panhandle area. Generally less than 1 per row foot in Deaf Smith, Swisher, and Castro Counties. Numerous beneficial insects noted in these counties. Greenbugs in wheat in Briscoe and Armstrong Counties. Large numbers of beneficial insects observed. (Daniels).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Averages per 10 sweeps of alfalfa (2 fields) by county: Chautauqua 3-10, Cowley 0, Butler 2-35. (Bell). OKLAHOMA - Ranged 0-20 per 10 sweeps of alfalfa in Payne County. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate in Rio Arriba County alfalfa fields. (Heninger).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Damaged 45 percent of stalks checked in counties south of Harnett. Larvae 100-150 per 100 stalks. (Sorensen, et al.). VIRGINIA - Severe infestations in milo in Isle of Wight County. (Goerger, Allen). DELAWARE - Adults 2 per night in Sussex County. (Burbutis, Lesiewicz). SOUTH DAKOTA - Larvae taken from corn in isolated field east of Glad Valley, northwestern Ziebach County. Infestation about 20 percent, fourth instar larvae 2-3 per infested stalk. This is a new county record. Now recorded from every county in State. (Jones). NEBRASKA - Ten fields surveyed in eastern Red Willow County averaged 75 percent infested with average of 2 borers per stalk. In western Red Willow County, borers infested 50 percent of plants and averaged 1 per stalk. (Campbell, Klein). KANSAS - Infested about 1 percent of stalks in Grant County field. This is a new county record. (Bell).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Infestations very light in eastern half of Red Willow County, but approached 50 percent of ears infested in west. Few last instar larvae remained in corn ears, but most left to enter soil. (Campbell, Klein).

SORGHUM WEBWORM (Celama sorghiella) - ALABAMA - Larvae heavy in grain sorghum in southern areas. Larvae 100 per head in one field in Pike County. (Pike et al.). MISSISSIPPI - Damage light to moderate in several fields of sorghum in Noxubee, Lowndes, and Clay Counties. (Robinson).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - WYOMING - Adults in corn near Powell, Park County, August 16, and Laramie, Albany County, September 13. Collected and determined by C.C. Burkhardt. These are new county records. (Burkhardt). SOUTH DAKOTA - Adults light, less than 1 per 200 stalks, in fields in south-central Potter County, and north-central Walworth County. These are new county records. (Jones).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - SOUTH DAKOTA - Adults less than 1 per 200 stalks, in cornfield in south-central Walworth County. This is a new county record. (Jones).

SMALL GRAINS

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Heavy on grain sorghum in El Paso, Reeves, and Pecos Counties. Light to moderate on grain sorghum in Dell City area of Hudspeth County. Recent wet and cool weather should aid in reducing activity in Trans-Pecos area. (Neeb).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Larvae ranged 10-15 per square foot in wheat and rye in Okmulgee County; some fields treated. Heavy in wheat in Rogers County and moderate in Cotton County. (Okla. Coop. Sur.). KANSAS - Larvae damaged seedling rye in Pawnee County. (Bell).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Heavy infestations in wheat in Carter County. (Okla. Coop. Sur.).

HESSIAN FLY (Mayetiola destructor) - NEBRASKA - Spring surveys in 6 crop districts indicated statewide infestation light; averaged 3.01 percent of culms infested with 3.96 flaxseeds per 100 culms. Heaviest infestation in south, east, and central districts, averaged 5.81, 5.16, and 4.94 percent infested, respectively; total of 145 fields sampled. Losses estimated at 227,757 bushels. (Somsen).

AN APHID (Rhopalosiphum padi) - WASHINGTON - Numerous in winter wheat in Benton and Franklin Counties; more abundant than Schizaphis graminum (greenbug). (Klostermeyer).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Ranged 5-10 per square foot in Bermuda grass pasture in Love County. Heavy in lawns and pasture in Choctaw and Okmulgee Counties and moderate in Cotton County. Averaged 14 per 10 sweeps of alfalfa in Payne County field. Ranged 7-8 per square yard in young alfalfa in Harper County. Heavy in young alfalfa in Garfield County and moderate in Cotton County. (Okla. Coop. Sur.). TEXAS - Heaviest damage reported from Gonzales and Caldwell Counties. Lighter infestations in Brazos, Burleson, Grimes, Waller, Fort Bend, and Brazoria Counties. Decreased in counties surrounding Erath County. Heaviest populations noted in Hamilton County. (Hoelscher et al.).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - MONTANA - Larvae and pupae collected and reared to adults from big sagebrush (Artemesia tridentata) from Park County during July 1971. Collected and determined by J.E. Henry. This is a new State record. (Henry).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - WASHINGTON - Larval tip damage noted throughout third alfalfa cutting in Touchet area, Walla Walla County; appears to be building up in this area. (Johansen). NEW MEXICO - Ranged 1-25 adults and 2-350 larvae per 25 sweeps of alfalfa near San Pedro, Rio Arriba County. (Heninger).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - PENNSYLVANIA - Adults 1.5 per sweep of alfalfa; all females checked gravid, in Centre County. (Gesell).

CLOVER SEED CHALCID (Bruchophagus platyptera) - NEBRASKA - Infested 13-14 percent of red clover seeds collected from several Richardson County fields on September 15. (Manglitz et al.).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - IDAHO - Larvae damaged alfalfa in several Grandview and Mountain Home, Elmore County fields, September 17. (Edwards). NEVADA - Larvae light on alfalfa in Lower Valley area near Lovelock, Pershing County. (Martinelli).

ALFALFA CATERPILLAR (Colias eurytheme) - KANSAS - Larvae damaged seedling alfalfa in Hamilton County. (Bell). NEW MEXICO - Larvae ranged 2-20 per 25 sweeps of alfalfa in Rio Arriba County. (Heninger).

THREECORNERED ALFALFA HOPPER (Spissitulus festinus) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: Dome Valley 140, Gila Valley 380, Yuma Mesa 120, and Yuma Valley 1,925. (Ariz. Coop. Sur.). OKLAHOMA - Averaged 13 per 10 sweeps of alfalfa in Payne County field. (Okla. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - MASSACHUSETTS - Count of 25 per 100 sweeps of alfalfa in Berkshire County field. (Miller). OKLAHOMA - Averaged 13 per 10 sweeps in alfalfa field in Payne County. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - MASSACHUSETTS - Adults 13 per 100 sweeps of alfalfa in Berkshire County field. (Miller).

LEAFMINER FLIES (Agromyza spp.) - MASSACHUSETTS - Adults 51 per 100 sweeps of alfalfa in Berkshire County field. Larval damage less than 1 percent. (Miller).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Adult and larval feeding injury ranged 50-80 percent in 800 acres near Sharptown, Salisbury, and Quantico areas of Wicomico County. Growers not applying controls due to closeness of harvest. Expect heavy overwintering populations in this area. (U. Md., Ent. Dept.). VIRGINIA - Increased east of City of Richmond. Larvae and adults widely distributed. (Allen). NORTH CAROLINA - All stages caused 20-30 percent defoliation in many central area fields. (Hunt).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Larval populations declined in past 7-14 days on unsprayed soybeans at farm near Gainesville, Alachua County. (Whitcomb). Adults abundant. (Fla. Coop. Sur.).

SOUTHERN GREEN STINK BUG (Nezara viridula) - MISSISSIPPI - Adults and nymphs 10 per linear foot in one Clay County field. (Robinson).

COTTON

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Adults heavy throughout State. Expect heavy populations entering or available to enter diapause, especially in extreme northern areas. (McQueen). TEXAS - Increased in isolated sites in Glasscock County, heaviest in northeastern part of county. Punctured squares ranged 20-25 percent in these isolated areas, adults 100 to 1,000 per acre. Light on east side of county near St. Lawrence area. Light, less than 10 percent punctured squares in isolated fields in Reagan County. Light spotted infestations in southeast corner of Martin County. Light and spotted on east side of Midland County. Building up on cotton in south-central counties where stalks still in fields. (Neeb).

BOLLWORMS (Heliothis spp.) - TEXAS - H. zea larval infestations less than 3 percent in untreated fields in El Paso and Hudspeth Counties. Larval infestations less than 4 percent in unsprayed fields and heavy in sprayed fields in Reeves County. Decreased, less than 4 percent larval infestation in most fields in Pecos County. Less than 1 percent infestation in Midland, Glasscock, and Martin Counties. Egg counts in Trans-Pecos area averaged less than 10 per 100 terminals in most fields. (Neeb). ARKANSAS - Increase in H. virescens numbers in southeast areas. Larval sample collected on farm in Chicot County September 16 showed 20 H. virescens and 2 H. zea. Sample September 21 in Chicot County showed 6 H. zea and 3 H. virescens. Sample of 79 larvae September 16 in Desha County showed 56 H. zea and 23 H. virescens. Seasons total 3,357 H. zea and 117 H. virescens. (Boyer). TENNESSEE - H. zea continues to cause considerable damage in late cotton in western area; in most cases, controls not justified. (Locke).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - TEXAS - Still moderate to heavy in Pecos County, heaviest infestations in Bakersfield and Coyanosa areas. Infestations limited to field margins in most fields. Light to moderate infestations around field margins Glasscock County. (Neeb). ARIZONA - Several cotton growers at Yuma had to use alternate pesticide for control in Yuma County. (Ariz. Coop. Sur.).

SALTMARSH CATERPILLAR (Estigmene acrea) - TEXAS - Light to moderate in El Paso, Hudspeth, Pecos, and Reeves Counties. (Neeb).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Infestation in untreated sweet peppers averaged 41.4 percent in Sussex County. (Burbutis, Lesiewicz).

BEANS AND PEAS

BEAN APHID (Aphis fabae) - OKLAHOMA - Specimens collected from thistle (Cirsium undulatum) in Garvin County by D.C. Arnold in May 1971. Determined by L.M. Russell. This is a new State record. (Okla. Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW MEXICO - Severe foliage skeletonizing in untreated snap beans at Espanola, Rio Arriba County and at Santa Cruz, Santa Fe County. (Heninger).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Heavy on late green beans in Oktibbeha County. (Wilson).

CUCURBITS

SQUASH BEETLE (Epilachna borealis) - WEST VIRGINIA - Adults and larvae caused light to moderate damage to squash vines in Mason County. (W. Va. Ins. Sur.).

SQUASH BUG (Anasa tristis) - OHIO - Adult and nymphs up to 100+ on acorn squash in Huron County. Curled leaves and feeding damage widespread. (Andress).

DECIDUOUS FRUITS AND NUTS

PECAN WEEVIL (Curculio caryae) - TEXAS - Moderate to heavy damage on pecans in Hamilton, Comanche, and Eastland Counties. (Hoelscher).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Active on pecan in Cleveland and Murray Counties. (Okla. Coop. Sur.).

CODLING MOTH (Laspeyresia pomonella) - OREGON - Fresh adults at lights in West Salem, Polk County. (Westcott).

A TORTRICID MOTH (Platynota idaeusalis) - PENNSYLVANIA - Many peach fruits larvae infested; entered through ruptured stem end of fruit at Arendsville, Adams County. (Asquith).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Defoliation heavy to pecan and walnut in scattered eastern areas. (Okla. Coop. Sur.). TEXAS - Heavy in Hamilton and Comanche Counties. Complete defoliation of trees 20-25 feet high noted in Proctor area of Comanche County. Infestations in Hardin and Titus Counties. (Hoelscher et al.).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Larvae heavy in unsprayed pecan orchards in Baldwin, Wilcox, and Covington Counties. (Crocker et al.). OKLAHOMA - Defoliation moderate to heavy to pecan, walnut, and persimmon in many eastern areas. (Okla. Coop. Sur.). TEXAS - Decrease throughout Trans-Pecos area on pecans and shade trees due to cooler temperatures and higher relative humidities during past few weeks. Heavy in Brazos, Grimes, Waller, Fort Bend, and Brazoria Counties, ranged 0-10 tents per tree. (Neeb, Green).

WALNUT HUSK FLY (*Rhagoletis completa*) - CALIFORNIA - Larvae numerous in dooryard walnut fruit. Larvae 1-100 per husk in untreated English and black walnuts. Very little damage where treatment applied. (Cal. Coop. Rpt.).

APHIDS - ALABAMA - *Tinocallis caryaefoliae* (black pecan aphid) this species and *Monellia* spp. heavy in Wilcox, Mobile, Covington, Bullock and Henry Counties. These species, other pecan pests, and weather caused excessive defoliation of trees and early nut drop in Henry, Pike, and other counties. (Hartzog, et al.).

CITRUS

COTTONYCUSHION SCALE (*Icerya purchasi*) - ARIZONA - Infestation evenly distributed throughout 20 acre dense lemon grove in Yuma County. Pesticide application history not known and no *Rodolia cardinalis* (vedalia) observed. (Ariz. Coop. Sur.).

SMALL FRUITS

EUROPEAN RED MITE (*Panonychus ulmi*) - PENNSYLVANIA - Concord grapes in untreated vineyards infested with eggs, larvae and adults, 8 eggs per leaf, 24 larvae/adults per leaf; in treated areas 2 eggs per leaf and 2 larvae/adults per leaf; overwintering eggs being laid under bark in northeast Erie County. (Jubb).

GRAPE BERRY MOTH (*Paralobesia viteana*) - PENNSYLVANIA - Larvae heavy on concord grapes; caused 10 percent loss of fruit in Centre County. (Adams, Sept. 20).

LEAFHOPPERS (*Erythroneura* spp.) - PENNSYLVANIA - Adults, 42 per 25 sweeps, in untreated Fredonia grapes in northeast Erie County. (Jubb). COLORADO - *E. comes* damage heavy to untreated grape vines in Grand Valley area of Garfield County. (Hantsbarger).

ORNAMENTALS

CABBAGE LOOPER (*Trichoplusia ni*) - MISSISSIPPI - Larvae ranged 50-60 per linear row foot on roses in Washington County. (Miller).

IRIS BORER (*Macronoctua onusta*) - OHIO - Moths appearing in blacklight traps. Egg masses expected soon. (Rings).

LARGER CANNA LEAFROLLER (*Calpodes ethlius*) - ALABAMA - Larvae damaged most canna lillies statewide. Populations become heavier this time of year; expected to remain major pest until killing frost. (Gardenhire, et al.).

A PIT SCALE (*Cerococcus kalmiae*) - PENNSYLVANIA - Heavy on Rhododendron August 6, in Lancaster County. Collected by E. Simons and determined by C.B. Sleesman. This is a new county record. (Kim).

FOREST AND SHADE TREES

WALKINGSTICK (*Diapheromera femorata*) - MISSOURI - Heavy infestations observed in Maries County, with some oaks completely defoliated. (Munson).

VARIABLE OAKLEAF CATERPILLAR (Heterocompa manteo) - MISSOURI - Moderate to heavy populations found throughout southern half of State. Oaks with 100 percent defoliation seen in spots throughout infested area. (Gass).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Light on shade and fruit trees in Taos County. Light to heavy on cottonwood trees along Rio Grande and Rio Chama Rivers in Rio Arriba County. Defoliation appears lighter than previous years. (Heninger).

A BARK BEETLE (Ips grandicollis) - OHIO - Damage moderate in 10-20 acres of Austrian pine. Infestation primarily due to weakened condition of trees. (Ohio Dept. of Agr.).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEVADA - Heaviest infestation and damage to elm trees at Beatty and Tonopah, Nye County since introduction. (Southworth, Zoller). NEW MEXICO - Damage to Siberian elm trees light in Taos County, moderate to heavy in Rio Arriba and Santa Fe Counties. Skeletonizing of foliage more severe than in past several years. (Heninger).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - WEST VIRGINIA - Larval damage moderate (20 percent) to foliage of mixed oaks on 25 acres in Monongalia County. (W. Va. Ins. Sur.).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 19 cases reported in U.S. September 19-25 as follows: TEXAS - Brewster 1, Edwards 1, Kinney 5, Terrell 1, Val Verde 2, Uvalde 1, San Faba 1; ARKANSAS - Little River 1, Miller 1. Total of 357 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 5, Chihuahua 174, Coahuila 97, Nuevo Leon 22, Tamaulipas 59. Total of 31 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 51,648,000; Arkansas 2,100,000; Arizona 5,640,000; Mexico 97,220,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - MARYLAND - Adults still heavy in Eastern Shore counties. Heaviest counts 180-300 per head of beef cattle near Whitehaven, Wicomico County. (U. Md., Ent. Dept.). MISSISSIPPI - Light to moderate on cattle in Oktibbeha, Lee, and Monroe Counties. (Robinson). OKLAHOMA - Decreased on cattle in Payne County (ranged 75-100 per head); low in Washington County, continued moderate in Cleveland County and heavy in Cotton County. (Okla. Coop. Sur.). TEXAS - Moderate to heavy on cattle in Trans-Pecos area. (Neeb).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Less than 1 per head on untreated dairy cattle in Payne County. (Okla. Coop. Sur.).

MOSQUITOES - OHIO - In Knox County, on nights of September 14, 15, and 16, averaged 4.8 female mosquitoes per trap per night. Species as follows: Aedes vexans 46, A. triseriatus 5, Anopheles punctipennis 41, A. quadrimaculatus 1, Culex restuans 16, Culex spp. 176, and Uranotaenia sapphirina 1. (Ohio Dept. of Health).

FACE FLY (Musca autumnalis) - SOUTH DAKOTA - Light on cattle in central McPherson County. Averaged 1 per 4 head of stock. This is a new county record. (Jones).

HOUSE FLY (Musca domestica) - OKLAHOMA - Ranged 10 to 12 per Scudder grid in untreated barns in Payne County. (Okla. Coop. Sur.).

STORED PRODUCTS

REDLEGGED HAM BEETLE (Necrobia rufipes) - CALIFORNIA - Heavy in unloaded ships of copra in San Francisco and Bay area ports. Warm weather caused rapid increase in activity, and thousands of adults flew to residences and processing plants in immediate areas. Normally rare; this instance unusual. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

A PTEROMALID WASP (Sceptrothelys grandiclava (Walker)) - NEBRASKA - Adults emerged from cocoons of Bathyplectes curculionis (an ichneumon) collected in June 1971 from alfalfa near Gothenburg, Dawson County. Collected by G.R. Manglitz. Determined by B.D. Burks. This is a new North American record. (Keith). S. grandiclava is a hyperparasite and reduces the effectiveness of the introduced species B. curculionis. Possible source of introduction was through the cocoons of Bathyplectes spp. being shipped from Europe for release in U.S. (PPD).

AN ENCYRTID WASP (Ooencyrtus kuwanai) - ALABAMA - Total of 20,000 specimens of this egg parasite released in Russell County at site where single male Porthetria dispar (gypsy moth) trapped on July 16. (Gardenhire, Barwood).

AN ICHNEUMONID (Hyposoter fugitivus) - WASHINGTON - Parasitized about 25 percent of Schizura concinna (redhumped caterpillar) in Pullman area, Whitman County; it, in turn, being heavily parasitized by unspecified chalcidoids. (Johansen).

CONVERGENT LADY BEETLE (Hippodamia convergens) - IDAHO - Flight of adults about one mile in length observed at 2:00 p.m. September 23, near southwestern base of Moscow Mountain, Latah County, where masses of hibernating beetles occur. (Dalke, Portman). KANSAS - Found in large numbers (probably for overwintering) in litter and bunch grass near bases of small pines, junipers, and other small trees and shrubs in landscape around a home in Shawnee County near Topeka. Adults in alfalfa ranged as follows per county (2 fields per 10 sweeps): Chautauqua 5-33; Cowley 4-18; Butler 13-22. (Bell).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

MORMON CRICKET (Anabrus simplex) - MONTANA - Observed ovipositing in several small areas in Castle Mountains in Meagher County. Populations in these areas three per square yard. (Pratt).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Light, scattered infestations averaged less than 3 percent infested bolls in El Paso County. Light infestations in Martin and Midland Counties. Spotted and heavy infestations in St. Lawrence area in Glasscock County. Infestations in this area averaged 15-35 percent on bottom bolls. Pecos Experiment Farm in Reeves County showed 2-4 percent infested bolls. Heavy infestations in central area near Waco. (Neeb, Cowan). A single blacklight trap in McLennan County recovered 10,646 moths period September 16-23. (Cowan).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Recovered 4 adults September 16-17 (DeWolf, Gibson); 2 adults September 21 (Chambliss, Venable) from sweet orange trees in Plymouth area of Orange County; first 4 adults collected in regulated area, last 2 are new finds and extend the infested area. (Fla. Coop. Sur.).

GRASSHOPPERS - NEBRASKA - Adult survey showed 740,000 acres of cropland infested with 8 or more per square yard. Found primarily in northeast and south-central areas. Economic populations found in all districts, but only in isolated preferred habitats. Dominant species were Melanoplus differentialis, M. bivittatus, and M. femurrubrum. Rangeland infestations decreased, but increased in density where found. Most confined to small pockets and widely scattered over range areas. Estimated that 50,000 acres infested with eight or more per square yard. Dominant species Ageneotettix deorum, Aulocara elliotti, Trachyrhachus kiowa, and Phlibostroma quadrimaculatum. (Bell. Hohnholt).

HAWAII INSECT REPORT

Sorghum - Larvae and adults of a CHRISTMAS BERRY WEBWORM (*Cryptoblabes aliena*) and SORGHUM MIDGE (*Contarinia sorghicola*) moderate to heavy on seedheads in 200 acres of sorghum at Kilauea, Kauai. (Sugawa).

General Vegetables - LEAF MINER FLIES (*Liriomyza* spp.) generally moderate to heavy in snap bean, tomato, and green onion fields at Waianae, Oahu. Larval mines heavy in 2 acres of watermelon at same area; 20 percent of older leaves severely affected. Light to moderate in most snap bean fields at Waimanalo. Mines and adults trace to light in 0.25 acre of lettuce at same area. GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*) moderate to heavy in snap bean and bittermelon plantings at Waimanalo; trace in 2.5 acres of snap beans. (Funasaki, Kawamura). CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) light to moderate in 1.5 acres of papaya at Kaaawa, Oahu, average 13 per square inch. Trace in 0.25 acre of same crop at Kaneohe. Moderate in 5,000 square feet of eggplant at Waimanalo; as many as 250 nymphs and adults per square inch, averaged 30. CORN EARWORM (*Heliothis zea*) heavy in 2.5 acres of corn at Waianae, Oahu; about 90 percent of ears with at least one larva. BEET ARMYWORM (*Spodoptera exigua*) larvae moderate in 0.5 acre of green onion at Waianae, Oahu; about 20-30 percent of leaves infested. Egg clusters trace, less than one per 20 plants. SOUTHERN GARDEN LEAFHOPPER (*Empoasca solana*) moderate in 0.1 acre of lettuce seedlings at Waianae, Oahu; as many as 7 per leaf, averaged 8 per plant. Light in 0.1 acre of snap beans at Waimanalo. A MEMBRACID BUG (*Antianthe expansa*) generally light on several eggplants (new host record) at Ewa, Oahu; as many as 20 nymphs and adults per plant. (Kumashiro).

Fruits and Nuts - BROWN SOFT SCALE (*Coccus hesperidum*) generally moderate in 3 acres of papaya at Hana, Maui; about 5 percent of 36 inch tall seedlings with as many as 150 scales per leaf. Several adults of a SWALLOWTAIL BUTTERFLY (*Papilio xuthus*) noted at large at Haleiwa and Waialee, Oahu. Parasitism by *Trichogramma* sp. (a minute egg parasite) noted in 27 of 40 eggs of *P. xuthus* collected at Foster Village and Ewa, Oahu. (Takahaski et al.).

Forest and Shade Trees - FULLER ROSE BEETLE (*Pantomorus cervinus*) adults moderate on 25 *Eucalyptus* sp. at Ulupalakua, Maui; few saplings with as much as 80 percent of leaf surface eaten. Adults moderate on *Pinus* sp. terminals at Waikii, Hawaii; as many as 5 on infested shoots, averaged 2. (Ah Sam et al.).

DETECTION

New North American Record - A PTEROMALID WASP (*Sceptrothelys grandiclava* (Walker)) NEBRASKA - Dawson County. (p. 699).

New State Records - BEAN APHID (*Aphis fabae*) - OKLAHOMA - Garvin County. (p. 696). SAGEBRUSH DEFOLIATOR (*Aroga websteri*) MONTANA - Park County (p. 694).

New County Records - EUROPEAN CORN BORER (*Ostrinia nubilalis*) KANSAS - Grant; SOUTH DAKOTA - Ziebach (p. 693). FACE FLY (*Musca autumnalis*) SOUTH DAKOTA - McPherson (p. 698). NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) SOUTH DAKOTA - Walworth (p. 694). A PIT SCALE (*Cerococcus kalmiae*) PENNSYLVANIA - Lancaster (p. 697). WESTERN CORN ROOTWORM (*Diabrotica virgifera*) WYOMING - Park, Albany; SOUTH DAKOTA - Potter, Walworth (p. 693).

CORRECTIONS

CEIR 21(39):681, 688 - ALFALFA WEEVIL (Hypera postica) - ARIZONA - Delete "This is a new county record" on page 681 and delete note on page 688. (PPD).

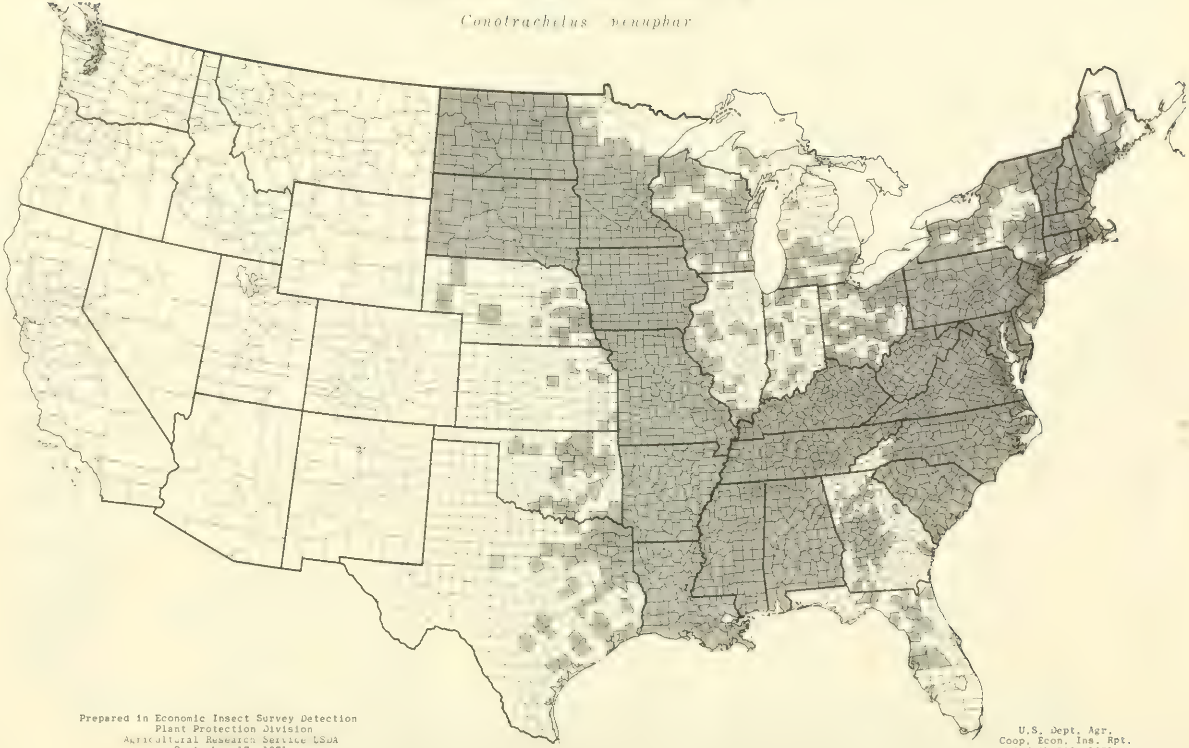
LIGHT TRAP COLLECTIONS

BL = blacklight
I = incandescent
MV = mercury vapor
O = other

	Tempera-ture °F.	Precip-itation (inches)	Type of trap	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 9/17-23			BL	3	2			9	2	14						1		1	16	3	3	16	4	
KENTUCKY																								
Bowling Green 9/20, 21			BL							2									4					
MISSISSIPPI																								
Stoneville 9/17-23	54-88	1.88	2BL	8				40	21	425						3		5	20	29	13	55	5910	
MISSOURI (County)																								
Platte 9/16-20			BL	1						1									4		1			
NEW JERSEY																								
Evesboro 9/15-21			BL	40						49					11		10	19	56		50	34	16	
Plainsboro 9/15-21			BL	24						96					5		8	32	96		50	14	26	
OHIO																								
Reynoldsburg 9/15-22			BL	5			4			1								4	1			4		
Wooster 9/17-23			BL	10			19			7							9	16	27		357	4	12	
TENNESSEE (County)																								
Fayette 9/20-24			BL	13				9	11	196					1	2	56	6	40	51	11	31	212	
Hardeman 9/20-24			BL	13				14	10	348							32	3	38	46	18	39	20	
TEXAS																								
Waco 9/17-23			BL	32	14			79										40	170	224	583	82	239	
VIRGINIA																								
Holland 9/11-16			BL	1						149					1	1	7		5			31		
Warsaw 9/16-20			BL							36					2				10			7		

Distribution of Plum Curculio

Conotrachelus nenuphar



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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 October 8, 1971 Number 41

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM larval emergence heavy on grasses in California. (p. 705).

FALL ARMYWORM larvae damaged small grains in Oklahoma and Texas. (p. 706).

GUAR insect situation in Rolling Plains of Texas. (p. 707).

VARIABLE OAKLEAF CATERPILLAR heavy on oaks in Oklahoma and Texas. (p. 710).

ORIENTAL FRUIT FLY male trapped at Pacific Beach, California. (p. 712).

PINK BOLLWORM continues heavy in north-central areas and in portions of Trans-Pecos area of Texas. (p. 713).

Detection

ASPARAGUS APHID reported for first time from Delaware. This is a new State record. (p. 709).

For new county records see page 714.

Special Reports

Distribution of Spruce Aphid. Map. (p. 716).

Reports in this issue are for week ending October 1 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

OCTOBER 1971

The National Weather Service's 30-day outlook for October is for temperatures to average above seasonal normals from the Great Plains to the Appalachians and Florida. Below normal averages are indicated for northern New England as well as the West Coast States and the Great Basin. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal over the middle and north Atlantic Coast States as well as Florida, the Pacific Northwest and the central Pacific coast. Subnormal totals are indicated for the northern Plains, the middle Mississippi Valley, the Tennessee Valley and eastern portions of the southern Plains. Elsewhere near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING OCTOBER 4

Reprinted from Weekly and Crop Bulletin supplied by Environmental Data Service, NOAA.

PRECIPITATION: Cold rain and snow fell in the Northwest on several days last week. Four inches of snow fell at Salt Lake City, Utah, in 6 hours Thursday. This is second time in 40 years that more than a few flakes of snow have fallen at Salt Lake City in September. Previous time was September 18, 1965, when 2.2 inches fell. Tropical Storm Olivia, off the coast of Baja California moved northeastward. It brought generous showers to the arid Southwest late Wednesday. Arizona and New Mexico benefitted most from these showers. Flagstaff, Arizona, received 1.70 inches and 2.23 inches fell at Zuni, New Mexico, Thursday. A low pressure area over the central Great Plains caused strong gusty winds from northwestern Oklahoma to western South Dakota. Gusts reached 61 m.p.h. at Russell, Kansas, and 56 m.p.h. at Lincoln, Nebraska, elsewhere over the central Great Plains gusts were generally 40 to 55 m.p.h. Hurricane Ginger, after meandering in the Atlantic Ocean for almost 3 weeks, began moving toward the middle Atlantic

Weather of the week continued on page 713.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - CALIFORNIA - Heavy larval emergence from lawns, grass and dichondra. Larvae covered lawns, driveways, walkways, and up onto sides of buildings. What triggered this movement at this time not known. Suspect weather change. Mass infestations noted at Sacramento, Sacramento County and at Davis, Yolo County. (Cal. Coop. Rpt.).

BEET LEAFHOPPER (Circulifer tenellus) - UTAH - Counts of 3 per 25 sweeps of Atriplex roseus in southern Curlew Valley, Box Elder County. (Knowlton).

CORN EARWORM (Heliothis zea) - MISSISSIPPI - Larvae averaged 5 per foot of row in sorghum in Holmes, Webster, and Noxubee Counties. (Robinson). ALABAMA - Mixed larval population of this species and Celama sorghiella (sorghum webworm) moderate in 200 acres of grain sorghum in Bullock County. (Kilgore). SOUTH CAROLINA - H. zea larval damage heavy to grain sorghum in Kershaw County. (Montgomery).

CORN LEAF APHID (Rhopalosiphum maidis) - VIRGINIA - Had been widespread and heavy on sorghum throughout eastern areas. (Allen). NEBRASKA - Small colonies still on corn beneath leaf sheaths in Kearney and Harlan Counties. (Keith).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light on alfalfa at Belen, Valencia County. (Heninger). UTAH - Light in San Juan County alfalfa. (Jones).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Fall survey in southeast district completed; 82.7 percent of plants examined infested and borers averaged 296.6 per 100 plants. These figures reflect slight decrease from fall of 1970 in this district. Preliminary results indicate major increase in borer populations in south district. In Kearney County, plants averaged 96 percent infested with 638 borers per 100 stalks; in Harlan County 98.4 percent of plants infested with borers averaged 823 per 100 stalks. Surveys to continue. (Keith, Berogan). IOWA - Percent infestation lower than 1970 in southern districts. State averages for percent plants infested (81 versus 76) and borers per 100 plants (321 versus 241) increased. More borers fifth instar in 1971 than in 1970. (Iowa Ins. Sur.). NORTH CAROLINA - Larval infestations in milo in Piedmont and Coastal Plains. Limited survey showed 50 percent of plants in one field infested near Plymouth, Washington County. (Hunt, Van Duyn).

FALL ARMYWORM (Spodoptera frugiperda) - KANSAS - Second to fourth instar larvae 1-5 on ears (soft to hard dough stage) of late corn in Riley County. (Bell). OKLAHOMA - Still in whorls of late-planted sorghum in Kingfisher County. Light in sorghum heads in Cotton County. Adults common in sorghum in Cotton County, in cotton in Grady County, and at lights in Payne County. (Okla. Coop. Sur.). TEXAS - Damage heavy in forage sorghum in Archer County. (Neeb et al.).

SORGHUM WEBWORM (Celama sorghiella) - MISSISSIPPI - Larvae 20 per head in 10-head sample in Webster County sorghum field. (Robinson).

SORGHUM MIDGE (Contarinia sorghicola) - FLORIDA - Problem on late developing sorghum at Quincy, Gadsden County. (Greene). TEXAS - Increased in late-planted grain sorghum in Fisher County past 14 days. (Boring, Spencer). MISSISSIPPI - Adults 2 per foot of row in 2 sorghum fields in Holmes and Webster Counties. Ranged 15-20 per head in late-blooming sorghum field in Noxubee County. (Robinson).

BANKS GRASS MITE (Oligonychus pratensis) - WYOMING - Many additional reports of moderate to heavy damage to corn in Big Horn Basin area (Washakie, Big Horn, Park, and Hot Springs Counties). (Burkhardt). TEXAS - Decreased on grain sorghum in Reeves and Pecos Counties. Moderate to heavy on grain sorghum in El Paso County. Recent rainfall and cool temperatures aided in reducing activity in Trans-Pecos area. (Neeb).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - WYOMING - Adults collected from corn near Casper, Natrona County on August 19. Collected and determined by C.C. Burkhardt. This is a new county record. (Burkhardt).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Destroyed 80-acre field of newly planted rye in Ottawa County. Heavy in small grains in Tulsa County with some fields treated. Moderate in Marshall County and light in Kay County. (Okla. Coop. Sur.). TEXAS - Damage extensive to isolated fields of new emerging small grain in Reeves County. One infested field with about 50 percent of stand destroyed. Continued to damage small grains in Rolling Plains counties of Throckmorton, Haskell, Archer, Dickens, Wichita, and Motley. Generally damage decreased in this area. (Neeb et al.).

WHITE GRUBS (Phyllophaga spp.) - OKLAHOMA - Damaging young wheat in scattered fields in Kingfisher County. Ranged 8-10 per square foot in some fields. Also in scattered fields in Greer County. (Okla. Coop. Sur.).

LYGAEID BUGS (Nysius spp.) - KANSAS - Damaged seedling wheat along field border in Stanton County. Treated. (Bell).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Continues to damage Bermuda grass lawns and pastures in many areas. (Okla. Coop. Sur.). TEXAS - Heaviest damage in Dickens County. Very light counts on coastal Bermuda grass in Fort Bend County. Moth flights heavy throughout much of central and north-central areas. Indications of another generation to appear about October 1 in these areas. (Neeb et al.).

TWOLINED SPITTLE BUG (Prosapia bicincta) - ALABAMA - Light damage in several fields of coastal Bermuda grass in Barbour County. Some damage in Tallapoosa County. Adults numerous. (Walton, Thompson). GEORGIA - Damaged coastal Bermuda grass during period ending September 25 in Marion County (Daniels), Screven County (Brannen), heavy in some fields in Burke County (Craven). SOUTH CAROLINA - Unspecified species heavy throughout coastal area on centipede and other lawn grasses. Damaged several fields of 5 to 10 acres of coastal Bermuda grass. (Nettles).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - IDAHO - Adults averaged 3 per square foot in thousands of acres of alfalfa hay, between Bruneau and Homedale, Owyhee County, September 19. (Homan). UTAH - Adults heavy in alfalfa field at Delta, Millard County. (Judd). NEW MEXICO - Light on alfalfa in Dona Ana County. (N.M. Coop. Rpt.). Medium on alfalfa at Belen, Valencia County. (Heninger). KANSAS - Survey of field of seedling alfalfa reported CEIR 21(40):695 to have been severely damaged by this species, revealed that damage may not be due to this species (based on low larval population found and absence of pupae). Suspect Spodoptera frugiperda (fall armyworm). In established fields of alfalfa nearby heaviest C. eurytheme counts 8 per 10 sweeps. (Bell).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - IDAHO - After third cutting of alfalfa surrounding ditch banks and fence rows required treatment near Ada County field. (Peterson). Noted in Grandview to King Hill, Elmore County, alfalfa. Some damage showing. (Edwards).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averaged 6 per 10 sweeps of alfalfa in Payne County. Also in alfalfa in Cotton and Marshall Counties. (Okla. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - MISSOURI - Adults ranged 1-6 per 10 sweeps in 3 of 5 fields of alfalfa in southwest area. (Munson). NEW MEXICO - Larvae light, ranged 0-3 per 25 sweeps of alfalfa near Belen, Valencia County. (Heninger).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: Yuma Mesa 70, Yuma Valley 530, and Gila Valley 1,000. (Ariz. Coop. Sur.).

A LYGUS BUG (Lygus sp.) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: Yuma Mesa 60, Yuma Valley 400, and Gila Valley 800. (Ariz. Coop. Sur.).

Guar Insect Situation in the Rolling Plains of Texas

Approximately 200,000 acres in Oklahoma, New Mexico, and Texas were planted to guar in 1971. About 125,000 of the total acreage was in the Rolling Plains of Texas.

It appears that a midge, Cecidomyia texana is the only insect species of major economic importance to guar production in the Rolling Plains. The female midge oviposits in the guar buds, where the larvae develop. The larval feeding causes the buds to abort, preventing pod formation and subsequent seed production. Heavy rains over most of the Rolling Plains nearly halted midge activity during late August. Hardeman and Wilbarger Counties received little rain during August and the greatest midge activity and loss in guar seed production occurred in those counties. Some fields in that area showed 70-80 percent loss. An unidentified species of Thysanoptera also caused some damage to guar foliage in the Beeville, Texas area.

There are a number of potentially destructive insect species in guar that warrant close surveillance. These were found in guar this season and include: Thrips (unidentified species) very common; geometrids (unidentified species), not common; yellowstriped armyworm (Spodoptera ornithogalli), not common; whitefly, (Aleyrodidae), common but not abundant; girdler (species unknown) reports only; leafhoppers, (unidentified species) very common and abundant; aphids, (probably Hysteroneura setariae); and, an unidentified midge that produces bud and pod galls (not abundant).

There are also a large number of beneficial arthropods in guar. Predacious insects include lady beetles, Hippodamia convergens, and Olla abdominalis; a pirate bug, Orius sp.; syrphid larvae, Chrysopa larvae and others. Spiders are common. There are four or five unidentified parasitic Hymenoptera that attack C. texana larvae. In addition, a braconid, Lysiphlebus testaceipes was found parasitizing the aphids H. setariae in guar. (Rogers). Guar was introduced from India in 1903 and is used for feed and fodder. A mucillage produced from the seed of this legume is used in paper production, in oil drilling mud, sizing, and as a stablizer in some foods in the U.S. Also used to some extent as a green manure on cotton land. (PPD).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - DELAWARE - Damage heavy to soybeans in southeastern Sussex County. (Burbutis, Lesiewicz). MARYLAND - Adults and larvae ranged 5-20 per row yard in 300 acres of soybeans near Girdletree and Stockton, Worcester County. Controls not applied due to advanced stages of soybean maturity. Overwintering populations will be heavy in this area. (U. Md., Ent. Dept.). SOUTH CAROLINA - Heavy on 15 acres of soybeans in Dillon County, caused 90 percent foliage loss in 3 different fields. Most visible damage occurred in less than 7 days. (Moody).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adults ranged 2-5 per row foot in 80 acres of soybeans near Hurlock, Dorchester County. (U. Md., Ent. Dept.).

SOUTHERN GREEN STINK BUG (Nezara viridula) - FLORIDA - Heavy on unsprayed soybeans, damaged pods at Quincy, Gadsen County. (Greene). SOUTH CAROLINA - All plants infested in 500 acres of soybeans in Chesterfield County. (Smith).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Up to 3 larvae per row foot on unsprayed soybeans at Quincy, Gadsen County. (Greene).

COTTON

BOLL WEEVIL (Anthonomus grandis) - MISSISSIPPI - Adults 6 per bloom in Holmes County field. One bloom had 27 adults. (Robinson). TENNESSEE - Populations heavy in untreated fields; damaged bolls up to 0.75 inches. (Cagle). ALABAMA - Cotton generally 7-15 days later than normal and adults heavy, egg laying and feeding punctures heavy on top bolls. Boll rot reported problem in Tuscaloosa, Madison, Cullman, Cherokee, De Kalb, Etowah, Dallas, Lowndes, Conecuh, and Barbour Counties. Over 50 percent of cotton lost in some fields in Conecuh County. (McQueen). GEORGIA - Still in late cotton throughout southern areas. (Womack, Sept. 25).

BOLLWORMS (Heliothis spp.) - TEXAS - In El Paso and Hudspeth Counties, H. zea infestations less than 3 percent. In Pecos and Reeves Counties, larval infestations 2-4 percent in isolated fields. In Midland, Glasscock, and Martin Counties, infestations less than 2 percent. Moderate damage throughout Rolling Plains area, infestations heavy in some fields near Vernon. Late cotton in Denton area noted infested by H. zea and H. virescens. (Neeb et al.). OKLAHOMA - Populations in Chickasha area, Grady County, about 70 percent H. zea and 30 percent H. virescens. (Okla. Coop. Sur.). MISSISSIPPI - Caused little damage to cotton. Few larvae feeding in large bolls. In Humphreys and Tunica Counties, egg deposition noted throughout plant. (Robinson). GEORGIA - Larvae and eggs remain heavy throughout southern areas. (Womack, Sept. 25).

CABBAGE LOOPER (Trichoplusia ni) - MISSISSIPPI - Moth collections totaled 16,970 in 2 blacklight traps at Stoneville, Washington County, September 24-30. (Pfrimmer et al.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - TEXAS - Light in Bakersfield area of Pecos County. In Glasscock and Midland Counties, light around field margins. Light in isolated fields in Delta County during past 14 days. (Neeb, Tappscott).

COTTON LEAFWORM (Alabama argillacea) - TEXAS - Recovered total of 17 moths in blacklight trap in McLennan County week ending October 1. (Cowan et al.).

TOBACCO

TOBACCO MOTH (Ephestia elutella) - NORTH CAROLINA - Up to 30 percent loss occurred in area bound by Duplin, Lee, and Wayne Counties. (Robertson).

SUGAR BEETS

ZEBRA CATERPILLAR (Ceramica picta) - WASHINGTON - Larvae of this species and Peridroma saucia (variegated cutworm) caused heavy damage to sugarbeets in some fields near Yakima, Yakima County. (Chaplin, Harwood).

AN EPHYDRID FLY (Psilopa leucostoma) - IDAHO - Adults reared from sugar beet (Beta vulgaris) leaves collected at Paul, Minidoka County, August 6. Determined by W. W. Wirth. (Peay).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - No adults in blacklight traps. Infestations of untreated sweet peppers averaged 55.4 percent. Third-generation larvae in fourth or fifth instar. (Burbutis, Lesiewicz).

GRASSHOPPERS - UTAH - Damage moderate to tomatoes along Wasatch Front, Box Elder County, and in some Weber, Davis, Salt Lake, and Utah County fields and gardens. (Knowlton).

VINEGAR FLIES (Drosophila spp.) - NEW JERSEY - Population heaviest in many years noted throughout State. Populations due to abundant rainfall causing cracking and rotting of tomato fruit. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Larvae damaged mungbeans in Kingfisher County. (Okla. Coop. Sur.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Still troublesome on lettuce in Dona Ana County. (N.M. Coop. Rpt.).

CUCURBITS

LEAF MINER FLIES (Liriomyza spp.) - ARIZONA - Averaged 50 per 50 sweeps of squash vines at northwest Phoenix, Maricopa County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

ASPARAGUS APHID (Brachycolus asparagi) - NEW JERSEY - Difficult to find; most decline due to predators. DELAWARE - Collected from asparagus ferns in Kent and New Castle Counties by J.S. McDaniel on August 23, 1971. Determined by L.M. Russell. This is a new State record. (Burbutis, Lesiewicz).

IMPORTED CABBAGEWORM (Pieris rapae) - COLORADO - Larvae up to 4 per head of cabbage in Larimer County. (Hantsbarger).

TURNIP APHID (Hyadaphis pseudobrassicae) - OKLAHOMA - Heavy and killing turnip plants in Kingfisher County. (Okla. Coop. Sur.).

ONION THRIPS (Thrips tabaci) - COLORADO - Still on unharvested onions in northeastern areas. (Hantsbarger).

DECIDUOUS FRUITS AND NUTS

A RAIN BEETLE (Pleocoma dubitalis dubitalis) - OREGON - First adults (4) taken in blacklight trap at Macleay, Marion County, September 26, recovered 10 on September 27. Cold morning temperature apparently restricted flight activity, no specimens caught September 28-30. First catches in Newberg area, Yamhill County, September 27, and adult activity followed same pattern as at Macleay. (Penrose).

WHITE APPLE LEAFHOPPER (Typhlocyba pomaria) - MARYLAND - Adults ranged 5-25 per 100 leaves in 4 acres of apples near Hancock, Washington County. (U. Md., Ent. Dept.).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Still heavy on pecans in Bryan County and light in Marshall County. (Okla. Coop. Sur.). TEXAS - Larvae infested pecans in Throckmorton and Young counties. Adult damage in these counties heavy. (Boring). MISSISSIPPI - Few adults in orchards throughout State. Larvae (up to 2 per nut) in an orchard in Panola County. Estimated infestation 30-40 percent. (Baughman).

FALL WEBWORM (Hyphantria cunea) - SOUTH CAROLINA - Still heavy on pecans, from several sections, especially Kershaw and Calhoun Counties. (Nettles). TEXAS - Heaviest infestations in Comal, Caldwell, Hays, Guadalupe, Gonzales, and Lavaca Counties. Infestations in this area ranged 0-40 tents per tree. In Brazos and Fort Bend Counties, heaviest counts 10 tents per tree. Also noted throughout north-central areas on native and improved varieties of pecans. (Massey et al.).

WALNUT CATERPILLAR (Datana integerrima) - TEXAS - Heavy in north-central area (Denton and Dallas Counties) and in McLennan County. (Turney, Hoelscher).

AN APHID (Panaphis juglandis) - CALIFORNIA - Adults and nymphs 20 per leaf of walnut at Moraga, Contra Costa County. This is a new county record. Collected by W. Gary and G. Jones. Determined by T. Kono. (Cal. Coop. Rpt.).

BLACKMARGINED APHID (Monellia costalis) - ARIZONA - Heavy on pecan trees at northwest Phoenix nursery, Maricopa County. (Ariz. Coop. Sur.).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Moderate to heavy damage to foliage in Winkler, Ward, and Reeves Counties. Light on pecans in Brazos County. (Neeb, Green).

SMALL FRUITS

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - NEVADA - Larvae heavy and damaging grapes in Las Vegas area, Clark County. (Zoller). NEW MEXICO - Light to medium on home planting grapes in Dona Ana County. (N.M. Coop. Rpt.).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - PENNSYLVANIA - Aerial gall observed on Seibel wine grapes; 25 percent of shoot infested, 7 percent galled; 6 galls per leaf; no galls on other varieties in northeast Erie County. (Jubb).

EUROPEAN RED MITE (Panonychus ulmi) - PENNSYLVANIA - Population declining; averaged 7 per leaf in untreated Concord grape vineyards and less than 1 per leaf in northeast, Erie County. (Jubb).

ORNAMENTALS

A GEOMETRID MOTH (Lambdina athasaria athasaria) - PENNSYLVANIA - Heavy larval damage in nursery to hemlock, larch, and white pine in Indiana County. (Mallis).

AZALEA CATERPILLAR (Datana major) - SOUTH CAROLINA - Heavy and unusually damaging to azalea from Fairfield County to coast. (Nettles).

OAK LACE BUG (Corythucha arcuata) - FLORIDA - Nymphs and adults infesting all nursery plants examined of Quercus michauxii (basket oak) at Glen St. Mary, Baker County (H.W. Collins). Most adults dead or dying due to a fungus. (Collins).

FOREST AND SHADE TREES

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Heavy and defoliating oaks on several thousand acres in southern Muskogee and northern McIntosh Counties. Heavy on several hundred acres of oaks in Sequoyah County. (Okla. Coop. Sur.). TEXAS - Heavy on oaks in Rains County. General infestations throughout many counties in northeast areas. (Hamman). ARKANSAS - Some defoliation in north-central areas. (Boyer).

FALL WEBWORM (Hyphantria cunea) - MASSACHUSETTS - Most severe defoliation in many years in Hampshire County. (Shaw). NEW MEXICO - Heavy on various shade trees in Dona Ana County. (N.M. Coop. Rpt.).

ASH BORER (Podosesia syringae fraxini) - COLORADO - Damage severe and some loss to ash trees in Kiowa County. (Hogan).

FALL CANKERWORM (Alsophila pometaria) - NORTH DAKOTA - Female moths seen September 21 in Fargo area, Cass County; about 14 days earlier than observed in 1970. (Anderson).

MIMOSA WEBWORM (Homadaula anisocentra) - TENNESSEE - Damage heavy to mimosa in central and western areas. (Locke, Gordon).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - ALABAMA - Numerous adults on oak trees in Jackson and De Kalb Counties. Jackson is a new county record. (Barwood, Dulaney).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 28 cases reported in U.S. September 26 to October 2 as follows: TEXAS: Bandera 1, Culberson 1, Edwards 1, Kinney 5, Burnet 1, Hamilton 1, Lampasas 1, Pecos 2, Presidio 3, Uvalde 3, and Val Verde 7; ARKANSAS: Little River 1. Total of 447 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 14, Chihuahua 277, Coahuila 88, Nuevo Leon 19, Tamaulipas 49. Total of 67 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 57,408,000; Arkansas 3,000,000; Arizona 3,766,000; Mexico 90,680,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Increased again on cattle in Payne County with warmer weather; averaged 750 per head. Heavy in Cotton and Okfuskee Counties and moderate in Hughes County. (Okla. Coop. Sur.).

MOSQUITOES - MINNESOTA - Light trap catches for week ending September 24 totalled 336 female mosquitoes in 16 traps in Minneapolis area. Aedes vexans accounted for 254 specimens, Culiseta morsitans for 37, Culex restuans 14, and Culiseta inornata 7. A. vexans dominant but light in bite collections. Sample of eggs immersed in laboratory showed 99 percent diapause, sample from different location showed only 60 percent of eggs in diapause. (Minn. Pest Rpt.).

HORNETS (Vespula spp.) - PENNSYLVANIA - V. maculata (baldfaced hornet) and V. maculifrons abundant on and around houses. Annoying in houses, picnic areas, fairs, and swimming pools in 5 southeastern counties during August and September. (Green).

BROWN DOG TICK (Rhipicephalus sanguineus) - MASSACHUSETTS - Very severe household infestation even after pest control operators treated twice in Worcester County. (Hall).

STORED PRODUCTS

PEA WEEVIL (Bruchus pisorum) - WASHINGTON - Large numbers emerged from harvested peas in elevators in Palouse region of Whitman County. (Hagel, Landis).

BENEFICIAL INSECTS

LADY BEETLES - ARKANSAS - Noted preying on Trialeurodes abutilonea (bandedwinged whitefly) in cotton, soybeans, and cocklebur in southeast areas. Most common lady beetle, Chilocorus stigma (twicestabbed lady beetle), then Coccinella novemnotata and Coleomegilla maculata. (Boyer). IDAHO - Hippodamia convergens (convergent lady beetle) numbers increased several hundred times in Latah County hibernating area. (Robinson).

A WEEVIL (Rhinocyllus conicus) - CALIFORNIA - Releases made in Santa Barbara County on Mission Conejo Road and on Santa Cruz Island for control of milk thistle. (Cal. Coop. Rpt.).

A PUNCTUREVINE SEED WEEVIL (*Microlarinus lareynii*) - OKLAHOMA - Adults reared from puncturevine (*Tribulus terrestris*) seed collected in Grady and Payne Counties. These are new county records. (Okla. Coop. Sur.).

A BRACONID (*Trioxys pallidus*) - CALIFORNIA - Biological control by this species of *Chromaphis juglandicola* (walnut aphid) throughout most of State satisfactory. This hymenopterous parasite introduced from Iran has become established in most walnut-growing areas. Growers normally combine aphid and *Laspeyresia pomonella* (codling moth) control; when aphid populations failed to develop, codling moth control overlooked. Expect some nut damage. (Cal. Coop. Rpt.).

MONARCH BUTTERFLY (*Danaus plexippus*) - VIRGINIA - Adults moderate in Botetourt and Roanoke Counties on September 26. (Miller).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (*Pseudococcus comstocki*) - CALIFORNIA - Survey continued in Strathmore, Tulare County area. Three properties suspect. Recent finds in Strathmore and Porterville received treatment. Treatments of infested plants, other than mulberry, accomplished. In Lindsay, mortality counts made in treatment area. So far kill has been excellent. (Cal. Coop. Rpt.).

EUROPEAN PINE SHOOT MOTH (*Rhyacionia buoliana*) - OREGON - Surveys of infested areas in Umatilla County showed no infestations at Hat Rock and Umatilla; light populations detected in Port of Umatilla area. Heavy at McNary Dam where controls may be needed in 1972. Estimated 9 percent of pines in Hermiston which were sprayed in 1969 sustained light damage this year. Compares with 7 percent in 1970. Appears that little population increase occurred during 1971. (Larson).

GRASSHOPPERS - KANSAS - During annual fall survey, an estimated 710,000 acres of cropland infested with 8 or more per square yard. Primarily in north-central, central, and northeast crop districts. In these areas, dominant species, *Melanoplus bivittatus*, *M. differentialis*, *M. sanguinipes*, and *M. femurrubrum*. Most heavy populations found in submarginal land and legumes. Other areas with populations averaging above 8 per square yard confined to Meade, Clark, Comanche, Barber, Kiowa and Pratt Counties and include adjoining sectors of Ford, Edwards, Stafford, and Kingman Counties. Heavy infestations in this area usually scattered and especially found in dry alfalfa and short grasses. Dominant species, *Aulocara elliotti*, *Ageneotettix deorum*, *Philibostroma quadrimaculatum*, *Melanoplus coloradus*. Other range species common. *Aeoloplus turnvulli* common in western areas, economic importance questionable; at one location (south of Arkansas River at Syracuse) 26 different species noted. Populations greater than 8 per square yard found in all districts, but only in isolated fields. Parasite and predator populations generally low statewide. (Bell, Hohnholt).

GYPSY MOTH (*Porthetria dispar*) - Male moths trapped in all but 2 MARYLAND counties. Weekly shipments of *Ooencyrtus kuwanai* (an encyrtid wasp) continue to States outside regulated area. Over one million specimens of this egg parasite shipped for release, in ALABAMA, MARYLAND, NORTH CAROLINA, OHIO, VIRGINIA, and in FLORIDA. TENNESSEE - To date all trapping negative. (PPD). PENNSYLVANIA - Numerous egg clusters found in plantation of Christmas trees east of Deer Lake, Schuylkill County. (Kadow).

TULIPTREE SCALE (*Toumeyella liriodendri*) - CALIFORNIA - Several infestations on tulip trees in Sonoma, Sonoma County. Infestation of 3 to 24 per limb collected by J. Sallee. Determined by T. Kono. This is a new county record and the second known infestation. (Cal. Coop. Rpt.).

ORIENTAL FRUIT FLY (*Dacus dorsalis*) - CALIFORNIA - Male trapped at Pacific Beach, San Diego County on September 30, determined this species October 1. Additional trapping planned. Male reported previously September 8 at Garden Grove, Orange County. See CEIR 21(39):686. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - In El Paso and Reeves Counties, Infestations light and scattered; averaged less than 10 percent of infested bolls in fields examined. In Coyanosa area of Pecos County, boll infestations 30-55 percent in isolated fields. Late cotton in Bakersfield area of Pecos County averaged 70-95 percent boll infestations. Observations of infested bolls in this area revealed that majority of larvae less than 10 days of age. Light infestations in Ward County. In Glasscock County, infested bolls 20-55 percent in isolated fields. Heavy activity throughout north-central areas from following counties: Delta, Hunt, Collin, Denton, Rockwall, Kaufman, Ellis, Johnson, Tarrant, Dallas, Navarro, Fannin, and Grayson. (Neeb, Turney). In McLennan County, total of 670 moths recovered in blacklight trap, September 24 to October 1. (Cowan). Weeks ending September 17 and 24 trapped 23,437 and 10,646, respectively. (PPD).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - In Placer County, seasonal operations completed. All results of detection negative for 1971 season. This area received 4 treatments and 4 inspections. Last positive find occurred in August 1968. In Sacramento County surveys negative. In El Dorado County, last positive June 1968. In Siskiyou County, no spread outside small core area. Number of infestations in core area reduced. In Yolo County, survey negative. In Fresno County, survey continued, late find of eggs, larvae, and adults in infested area on September 21. (Cal. Coop. Rpt.).

A WHITEFRINGED BEETLE (Graphognathus leucoloma striatus) - ARKANSAS - Adults collected at Augusta, Woodruff County, by M.W. Moore and F. Prentice on September 22; NORTH CAROLINA - Adult collected near Mebane, Orange County, by J.W. Scott on September 19. Determinations by V.H. Owens, confirmed by R.E. Warner. These are new county records. (PPD).

Weather of the week continued from page 704.
coast about midweek. It crossed the North Carolina coast Thursday. Winds at Cape Hatteras gusted to 74 m.p.h. and 5.62 inches of rain fell in 24 hours. The storm brought about 8.50 inches of rain to Wanchese, North Carolina, radio station. By the weekend, Ginger had weakened but produced generous rains to portions of Virginia and North Carolina before moving to the Atlantic Ocean. A weekend storm moved across the northern Great Plains and dumped wet snow over the Rocky Mountains and cold rain accompanied by blustery winds. Snow accumulated to a foot or more in southeastern Montana. Light rains fell over the northern and central Great Plains Thursday and Friday, and heavy showers occurred from northern Texas to northern Missouri Saturday, with a few localities in Texas and eastern Oklahoma receiving more than 3 inches.

TEMPERATURE: In general, the Northwest was seasonally cool. The Northern States from the northern Great Plains were somewhat chilly, the Southwest was hot, and a large area from the central Great Plains to the Gulf of Mexico and eastward to the Atlantic was warm and humid. Rising temperatures prevailed over the central Great Plains early in the week. Chicago, Illinois, was 20° warmer Monday afternoon than Sunday. Respective maximum temperatures on those days were 84° and 64°. In contrast to sultry summer weather which prevailed over the Central and Eastern States, a large low over the central Great Plains shortly after midweek brought damp chilly autumn to the northern Rocky Mountains and northern Great Plains. West Yellowstone, Montana, warmed to only 33° Thursday afternoon. Sunday morning, autumn chill penetrated far southward into Arizona and New Mexico, with temperatures over northern portions of those States tumbling to below freezing. Southerly winds brought unusually mild weather across the central and southern Great Plains to the Great Lakes region late in the week. Madison, Wiconsin, registered 88° Thursday and Friday afternoons. By Sunday, cool air lay over the northern Great Plains and maximums remained mostly in the 50's. Weekly mean temperatures averaged below normal from the Pacific Ocean to the western edge of the Great Plains and above normal over the rest of the Nation. The Great Basin averaged 9° to 12° colder than normal. The Mississippi and Ohio River Valleys and the Great Lakes region averaged 9° to 15° warmer than normal.

HAWAII INSECT REPORT

Corn - All stages of TUMID SPIDER MITE (Tetranychus tumidus) moderate to heavy in 1.5 acres of sweet corn at Waialua, Oahu; 50 percent of leaves (mostly older leaves) infested. As many as 250 nymphs and adults and 200+ eggs per square inch on infested leaves. All stages trace in adjoining 3 acres of 12-inch tall seedlings; trace in large planting of same crop at Pupukea. CORN EARWORM (Heliothis zea) larvae trace in 1.5 acres each of sweet corn and tomatoes at Waialua, Oahu; less than 5 percent of corn ears and tomato fruits affected. (Kawamura).

Turf, Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) larvae generally light in 50 acre pasture of pangola grass (Digitaria decumbens) at Hanalei, Kauai; as many as 13 (average less than 5) per square foot. Adults trace. Larvae held for observation of parasite activity. Larvae in this pasture during summer of 1969 extremely heavy in some paddocks. (Sugawa).

Fruits and Nuts - Parasitism of a SWALLOWTAIL BUTTERFLY (Papilio xuthus) eggs by Trichogramma sp. (a minute egg parasite) increased since first field parasitism observed in early September. On Oahu, field collected eggs parasitized as follows: 12 of 15 at Waipahu (80 percent); 20 of 21 at Ewa (95 percent) and 3 of 3 at Waialee. Sightings of adult P. xuthus declined in most areas past 14 days. (Kumashiro et al.). COCONUT SCALE (Aspidiotus destructor) generally light to moderate at Keehi Lagoon Beach Park and Hawaiian Memorial Park, Oahu. Moderate colonies on about 10 percent of pinnae on 40 percent of fronds at both areas. Nymphs and adults of Telsimia nitida (a lady beetle) light on infested pinnae at Keehi Lagoon Beach Park. Generally light in small hedge planting of mockorange (Murraya paniculata) at Kaneohe; moderate on few branches with 25 percent of leaves (lower surface) completely covered with scales. (Wong, Kawamura).

Forest and Shade Trees - Nymphs and adults of a CONIFER APHID (Cinara carolina) light on terminals of several Pinus sp. at Princeville, Hanalei, Kauai. Generally trace in 20 acres of Pinus taeda at Olinda, Maui; less than 1 percent of trees infested. (Sugawa, Miyahira).

Beneficial Insects - Larvae of a CACTUS MOTH (Cactoblastis cactorum) moderate in 200 acres of cactus at Kekaha, Kauai; about 10 percent of pads infested. C. cactorum purposely introduced from Australia in 1950 to control cactus on Hawaii Island. (Sugawa).

DETECTION

New State Record - ASPARAGUS APHID (Brachycolus asparagi) - DELAWARE - Kent County. (p. 709).

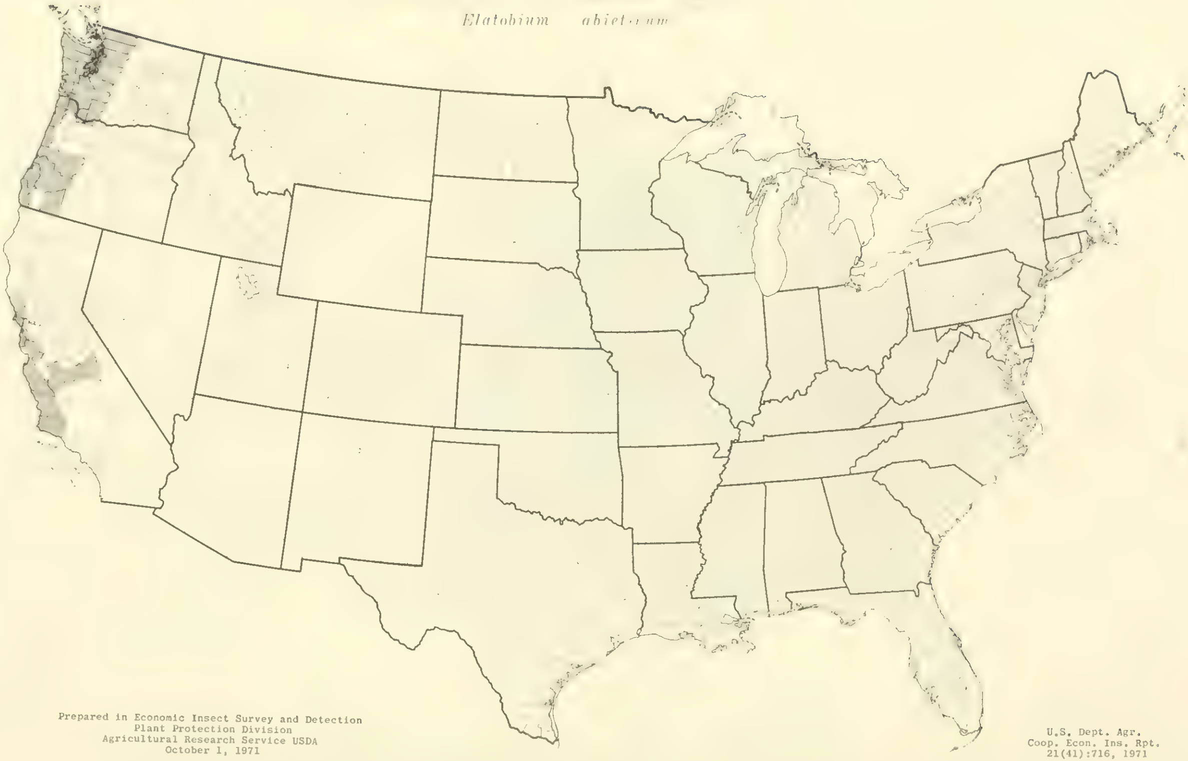
New County Records - AN APHID (Panaphis juglandis) CALIFORNIA - Contra Costa (p. 710). ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) ALABAMA - Jackson (p. 711). A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) OKLAHOMA - Grady, Payne (p. 712). TULIPTREE SCALE (Toumeyella liriodendri) CALIFORNIA - Soma (p. 712). WESTERN CORN ROOTWORM (Diabrotica virgifera) WYOMING - Natrona (p. 706). A WHITEFRINGED BEETLE (Graphognathus leucoloma striatus) ARKANSAS - Woodruff; NORTH CAROLINA - Orange (p. 713).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap	BL = blacklight I = incandescent MV = mercury vapor O = other Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 9/24-30			BL	1				16		8									3	5	1	8		
KANSAS																								
Great Bend 9/9-30			BL	81		17	72			380								23	316		1	21		
Greeley 9/10, 14, 17, 9/21, 24, 28			BL	21		7				168								19	111					
MISSISSIPPI																								
Stoneville 9/24-30	67-91	Trace	2BL	15				54	148	1727									16	70	11	337	16976	
MISSOURI (County)																								
Platte 9/27-29			BL							51									14		10	7		
NEBRASKA																								
Concord 9/9, 16, 23			BL	32			1			39				211	3	5	47	18	94					
NEW HAMPSHIRE																								
Strafford 9/26			BL																1					
NEW JERSEY																								
Cedarville 9/22-28			BL	38						22						4		11			15	6		
Evesboro 9/22-28			BL	20						20						6	4	14			32	21		
Plainsboro 9/22-28			BL	16						13						3	2	14			26	19		
OHIO																								
Reynoldsburg 9/22-29			BL	4						11								1				4		
Wooster 9/24-30			BL	12			20			27							7	31	36		188	2	2	
SOUTH DAKOTA																								
Brookings 8/30-9/5			BL				127										163	37	109					
TENNESSEE (County)																								
Fayette 9/27-10/1			BL	7				12	2	185					3		77	1	32	27	3	46	31	
Hardeman 9/27-10/1			BL	20				10	2	227						2	21	4	16	13	10	38	61	
Lauderdale 9/27-10/1			BL	21				20		206					1	4	53	6	22	11	3	43	61	
TEXAS																								
Waco 9/24-10/1			BL	63		9		139		2981								135	686	257	712	358	670	
VIRGINIA																								
Holland 9/17-27			BL	2						325									13			56		
Montgomery 9/21-28			BL	39						93					3				34			63		
Warsaw 9/21-28			BL	2					1	29					1	1			9			10		

Distribution of Spruce Aphid

Elatobium abietinum



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VOL. 21 No. 42 October 15, 1971

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ECONOMIC INSECT REPORT

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AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

EUROPEAN CORN BORER heaviest in portions of Iowa since 1957. Populations increased in central Nebraska. (p. 719).

FALL ARMYWORM larvae outbreak on wheat in limited area of Arkansas. Small larvae heavy on wheat in Oklahoma. (p. 719).

FALL WEBWORM larval damage critical to unprotected pecan trees in central and southern Alabama. (p. 721).

A CONIFER SAWFLY expected to cause heavy defoliation to shortleaf pine, also expect increase in TENT CATERPILLARS during 1972 in Missouri. (p. 722).

Total of 50 SCREWWORM cases reported in Texas and 2 in Arkansas, an increase from 26 and 1 respectively. (p. 723).

PINK BOLLWORM situation in Trans-Pecos area of Texas. (p. 724).

Detection

For new county records see page 725.

Reports in this issue are for week ending October 8 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING OCTOBER 7

Reprinted from Weekly and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Fine autumn weather prevailed over most of the Nation. Generous rains fell along the Atlantic seaboard late in the week. Only widely scattered, light showers fell over the west.

PRECIPITATION: Light rain fell early in the week over the Washington coast. Heavier showers fell from the lower Rio Grande Valley northeastward to the middle Atlantic coast late Monday and Tuesday, and from Pennsylvania to New England later in the week. In 24 hours ending Tuesday morning, Cotulla, Texas, received 6.71 inches of rain. Rain fell over the eastern half of the Nation late in the week. This included light sprinkles from the Red River of the North Valley to New England Thursday, light to moderate showers from the lower Rio Grande to Western New York on Friday, and moderate rains in the Ohio River Valley and soil soaking rains along the Atlantic seaboard Saturday and Sunday. Florida received light showers on several days late in the week.

TEMPERATURE: High pressure systems dominated the weather over most of the nation last week. They brought typical autumn weather with the mild sunny afternoons and the cool invigorating nights. It was especially cool from the northern Great Plains to New England where afternoon temperatures by midweek were in the 40's, 50's and low 60's. The early morning temperatures dropped to the 30's over the higher Rocky Mountains and on Friday morning, minimums in the 30's and 40's were common over the north from Washington and Oregon to the Atlantic Ocean and as far south as Virginia. Beckley, West Virginia, registered 32° Friday morning. The exceptions to the fine cool autumn weather included southern California where desert winds pushed the temperatures to the 30's most afternoons and sunny Florida where the mercury reached the 90's on Wednesday afternoon. Los Angeles, California, registered 102° Wednesday. Santa Ana winds caused unseasonal warmth over the inland portions of California over the weekend. A large high, centered over the Great Basin, brought warm air northward to Montana and cool air to a large area from the Dakotas to the Great Lakes and southward to Oklahoma and Tennessee. On Saturday afternoon, the maximum temperatures over this large area were mostly in the 60's. Temperatures averaged below normal over most of the Nation. Warmer than normal temperatures prevailed over much of the West.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Survey late September shows 76 percent nymphs in Fresno County. In Kings County, nymphs very young. Treatment started in Kern County on October 6. In San Joaquin Valley about 200,000 acres of Russian thistle to be treated. (Cal. Coop. Rpt.).

CORN EARWORM (Heliothis zea) - MICHIGAN - About 2.5 percent of late-harvested sweet cherry peppers in Monroe County infested. Indicates new insect problem on this crop, following end of control for second-generation Ostrinia nubilalis (European corn borer). (Sauer). DELAWARE - Adult flights less than 1 per night in blacklight traps in Sussex County. (Burbutis, Lesiewicz). OKLAHOMA - Larvae averaged 12 per 25 sweeps in alfalfa in Jackson, Tillman, Kiowa, Cotton, Stephens, and Jefferson Counties. Adults common in most areas. (Okla. Coop. Sur.).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Populations light, but infestations scattered in sorghum in Roswell area, Chaves County. (Mathews).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Light on alfalfa breeder plots at Reno, Washoe County. (Arnett).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - IOWA - Infested 99 percent of plants in 32 fields in Boone County. Borers 340 per 100 plants; 54 percent of shanks tunnelled, 395.8 ears per acre felled as result. Population (56,938 borers per acre) greatest since 1957. (Iowa Ins. Sur.). NEBRASKA - Populations declined in northeast, increased in central district, as compared to fall of 1970. Plants in northeast averaged 94.6 percent infested, 214.7 borers per 100 plants. Central district had 84.6 percent infested plants, 526.9 borers per 100 plants. (Keith, Berogan). NORTH CAROLINA - Surveys show even distribution statewide. Heaviest infestations in Coastal Plain area. Stalk breakage related to borers did not exceed 2 percent in any area. (Hunt).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Continues heavy in late sorghum in Noxubee County. (Robinson). NORTH CAROLINA - Adults collected from milo near Plymouth, Washington County for first of season. About 80+ percent of heads destroyed in 6-acre field. (Van Duyn et al.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MISSOURI - Percent infestation by county as follows: Butler 23.2, Cape Girardeau 10.4, Dunklin 35.2, Mississippi 68, New Madrid 37.6, Pemiscot 29.6, Scott 40.8, Stoddard 24.8. (Munson). ARIZONA - In 1970, at this time many fields of sorghum in Pima County 50 percent infested. Presently about 4 percent. (Ariz. Coop. Sur.).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Outbreak, larvae up to 12 per square foot of wheat in Ashley County; about 100 acres destroyed. Controls applied to several fields. (Boyer). OKLAHOMA - Small larvae heavy on wheat in Jackson, Tillman, Cotton, Kiowa, Jefferson, and Stephens Counties. Ranged up to 6 per 4 leaf plant in some fields. Ovipositing adults numerous. Some fields sprayed 3 times. Heavy in Harper, Woodward, Osage, and Craig Counties; moderate in Garvin County. Moderate on rye in Choctaw County. (Okla. Coop. Sur.). TEXAS - Damage decreased on small grains and grasses in Rolling Plains area. Some damage continues. Noted throughout much of south-central area. Infested coastal Bermuda grass, forage sorghums, lawns, and golf greens in counties near Gonzales. (Boring, Cole).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (*Spodoptera frugiperda*) - MISSISSIPPI - Infested Bermuda grass lawns in Oktibbeha County. (Robinson). ARKANSAS - Feeding on fescue pastures in Ashley County. Controls may be needed. (Boyer). OKLAHOMA - Light to moderate in south-central area. (Okla. Coop. Sur.).

TWOLINED SPITTLEBUG (*Prosapia bicincta*) - ALABAMA - Light but noticeable damage to several coastal Bermuda grass fields in Geneva and Barbour Counties. (Reynolds, Walton).

FORAGE LEGUMES

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Counts per 100 sweeps of alfalfa. Southern Maricopa County, larvae 54; Yuma County, Yuma Mesa and Valley 20, Gila Valley 80. (Ariz. Coop. Sur.). NEW MEXICO - Larvae ranged 1-2 per sweep in most alfalfa in Lea County and ranged 5-8 per 25 sweeps in fields near Roswell, Chaves County. Adults very abundant in Lea County. (Mathews).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Heavy in fall planted alfalfa in Osage County. (Okla. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - OKLAHOMA - Heavy; damage light in alfalfa in several southwestern and south-central counties. (Okla. Coop. Sur.).

THREECORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Counts per 100 sweeps of alfalfa: Southern Maricopa County 486; Yuma County, Parker Valley 125, Gila Valley and Yuma Mesa 110, Yuma Valley 650. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - OKLAHOMA - Adults averaged 12 per 25 sweeps of alfalfa and common on ground. (Okla. Coop. Sur.).

SOYBEANS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Defoliated soybean leaves in Nansemond County area; beans too mature to suffer much damage. (Smith).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - FLORIDA - Larvae attacked and killed by *Spicaria rileyi* (a fungus) in soybean fields near Gainesville, Alachua County. (Whitcomb).

BANDEDWING WHITEFLY (*Trialeurodes abutilonea*) - MISSISSIPPI - Surveys in Leflore, Sunflower, Bolivar, and Coahoma Counties. Indicated infestations most common around edges of fields. Heavy in single field in Leflore County; sooty mold noted throughout field. (Robinson).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Populations light (punctured square counts less than 1 percent) in St. Lawrence area of Glasscock County where diapause control programs have been carried out in previous years. In northeastern part of Glasscock County where diapause control programs had not been conducted in past, populations ranged 10-30,000 adults per acre. In many of these fields 100 punctured squares common. In Midland and Martin Counties, punctured squares ranged less than 1 percent. (Neeb). OKLAHOMA - Adults numerous in cotton with flowers and green squares in southwestern area fields not sprayed; squares not likely to make before frost. (Okla. Coop. Sur.). ALABAMA - Weevils in fields still heavy although present newly emerged adults not expected to cause further damage this season. Counties reporting problems with boll rot are Marion, Cullman, Cherokee, Cleburne, Etowah, Hale, Dallas, and Barbour. (McQueen).

BOLLWORMS (*Heliothis* spp.) - TEXAS - Heavy *H. zea* infestations appeared in fields scattered throughout Rolling Plains area surrounding Wilbarger County. Heaviest in fields where insecticides had been applied. (Boring). MISSISSIPPI - Few larvae feeding on mature green bolls in several fields in Leflore, Sunflower, Bolivar, and Coahoma Counties. Average infestation about 3 percent. Some producers applied an additional application of insecticide to control these larvae. Population consisted of about 20 percent *H. virescens*. (Robinson).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - DELAWARE - Most larvae in diapause in sweet peppers in Sussex County. (Burbutis, Lesiewicz).

BEANS AND PEAS

NOCTUID MOTHS - FLORIDA - Larvae of *Anticarsia gemmatalis* (velvetbean caterpillar) account for 50 percent of population and *Heliothis zea* (corn earworm) 25 percent, and *H. virescens* (tobacco budworm) 25 percent, on pigeon pea at Gainesville, Alachua County. (Mead).

DECIDUOUS FRUITS AND NUTS

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Larval damage on unprotected pecan trees critical in many central and southern areas. Defoliation more complete than previously noted. Early loss of leaves reduces quality and yield of nuts and potential yields for 1972. (McQueen).

GREEN PEACH APHID (*Myzus persicae*) - WASHINGTON - Alates migrating to overwintering host, peach, in Yakima Valley, Yakima County. (Johnson, Landis).

PEACHTREE BORER (*Sanninoidea exitiosa*) - OKLAHOMA - Heavy in young peach trees in Latimer County. (Okla. Coop. Sur.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - FLORIDA - Many crawlers on peach trees at Hawthorne, Alachua County. (Whitcomb).

CITRUS

Insect Situation in Florida - End of September - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 80 (norm 57) percent of groves; economic in 63 (norm 35) percent. Increasing after brief decline in August and early September. Population highest for this period in 20 years of record. Further increase expected to keep population in high range into November. Highest districts west, south, central, and north. East district low. CITRUS RED MITE (*Panonychus citri*) infested 18 (norm 23) percent of groves; economic in 4 (norm 5) percent. Population near normal low level. Expect gradual increase and few groves may develop important infestations. Highest district west. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 17 (norm 16) percent of groves; economic in 2 (norm 3) percent. This mite at low level of abundance normal for September. Fall increase started and will continue into December. Highest district south. GLOVER SCALE (*Lepidosaphes gloverii*) infested 48 (norm 50) percent of groves; economic in 5 (norm 8) percent. Slightly below normal and in low range. Gradual increase expected. Highest district west. PURPLE SCALE (*L. beckii*) infested 45 (norm 46) percent of groves; economic in 1 (norm 2) percent. CHAFF SCALE (*Parlatoria pergandii*) infested 28 (norm 30) percent of groves; economic in 2 (norm 2) percent. YELLOW SCALE (*Aonidiella citrina*) infested 19 (norm 46) percent of groves; none economic (norm 6 percent). These 3 scales all near or below their normal low levels for this time of year in all districts. Little change expected. BLACK SCALE (*Saissetia oleae*) infested 59 (norm 37) percent of groves; economic in 34 (norm 15) percent. Although population at record high level for this month of year, it will soon drop out of high range and gradually decrease to normal. Highest districts central, south, and east. AN ARMORED SCALE (*Unaspis citri*) infested 27 percent of groves; economic in 21 percent. Population higher than in September of any prior year.

Increase predicted for October. WHITEFLIES infested 88 percent of groves; economic in 20 percent. Population of larval stage above normal and in high range. Decrease expected. Highest districts west, central, and east. (W.A. Simanton, Citrus Expt. Sta., Lake Alfred)).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Young trees treated in citrus nursery at Yuma. Home owners noticed fruit scarring and leaf damage, especially to new growth in Yuma County. (Ariz. Coop. Sur.).

GRASSHOPPERS (Melanoplus spp.) - ARIZONA - Unusually heavy in citrus nursery feeding on seedlings on Yuma Mesa, Yuma County. Controls needed. (Ariz. Coop. Sur.).

SMALL FRUITS

BROWN SOFT SCALE (Coccus hesperidum) - CALIFORNIA - Adult infested wild grapevines at Napa, Napa County. Extensive grape vineyards in area. (Cal. Coop. Rpt.).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - PENNSYLVANIA - Aerial leaf galls caused by nymphs and adults seen on Sevyl Blanc grape, 20-25 galls per leaf in Lancaster County September 27; root galls on Concord grapes in northeast, Erie County September 29. (Adams).

FOREST AND SHADE TREES

A CONIFER SAWFLY (Neodiprion taedae linearis) - MISSOURI - Defoliation heaviest in 15 years on 3-23 foot tall planted shortleaf pine along fringe of natural range. Heavy defoliation expected in 1972. (Gass).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - MISSOURI - Expect populations to remain below normal or normal in 1972. (Gass).

WHITE PINE SAWFLY (Neodiprion pinetum) - WEST VIRGINIA - Light larval damage to plantings on reproduction white pine in Raleigh County. (W. Va. Ins. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - MISSOURI - Damage to evergreens expected to increase in 1972. (Gass).

PALES WEEVIL (Hylobius pales) - MISSOURI - Not serious in Christmas tree plantations in 1971. Expect incidence to increase in 1972. (Gass).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - NORTH DAKOTA - Elm trap logs placed along Red River during May at 4 sites in Cass and Richland Counties this period had up to 24 galleries per foot of log. (Brandvik).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - MISSOURI - In 1971, more widespread and caused more defoliation in previously uninfested areas. Expect little change in 1972. (Gass).

FALL WEBWORM (Hyphantria cunea) - MISSOURI - Populations heavy in southwest areas in 1971. Expect heavy defoliation in same areas in 1972. (Gass).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Heavy oak tree defoliation in Preston area, Okmulgee County and Bryan County. (Okla. Coop. Sur.). ARKANSAS - Still abundant on oak trees in Jefferson and Lincoln Counties. (Boyer).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MISSOURI - First reports in 75 years in southern areas. Expected to be more numerous in 1972. (Gass).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - MISSOURI - Egg mass counts indicate heavy populations can be expected in 1972. (Gass).

BIRCH SKELETONIZER (*Bucculatrix canadensisella*) - PENNSYLVANIA - Heavy larval and cocoon counts. Defoliation over 70 percent, mainly yellow birch in Warren and Crawford Counties, September 23-30. (Adams).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 53 cases reported in U.S. October 3-9, as follows: TEXAS - Brewster 2, Edwards 9, Kerr 1, Kinney 3, Maverick 1, Val Verde 16, Pecos 1, Real 1, Terrell 1, Uvalde 3, Bowie 1, Concho 1, Coryell 1, Hamilton 2, Kimble 1, Lampasas 3, Mills 2, San Saba 1; ARKANSAS - Little River 2; UNKNOWN ORIGIN - 1. Total of 441 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 2, Sonora 7, Chihuahua 251, Coahuila 98, Nuevo Leon 21, Tamaulipas 62. Total of 121 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 63,682,000; Arkansas 2,670,000; Arizona 3,646,000; Mexico 80,106,000. (Anim. Health Div.).

STABLE FLY (*Stomoxys calcitrans*) - FLORIDA - Averaged 2.6 per head on untreated beef cattle at Quincy. (Head). TEXAS - Still a problem in Archer County. (Boring). NORTH DAKOTA - Infestations continue annoying hogs in east-central counties. Ranged up to 10 per square foot on pens, floors, and walls in hog barn in Traill County. (Brandvik).

HORN FLY (*Haematobia irritans*) - MARYLAND - Adults ranged 60-200 per head on 30 beef cattle in Wicomico County. (U. Md., Ent. Dept.). FLORIDA - Averaged 1.4 flies per head on untreated beef cattle at Quincy, Gadsden County. (Head). TEXAS - Activity decreased on cattle in Archer County. (Boring).

HORSE BOT FLY (*Gasterophilus intestinalis*) - MARYLAND - Adults averaged less than 1 (laying eggs) per 3 horses in several areas in Prince Georges and Worcester Counties. (U. Md., Ent. Dept.).

FACE FLY (*Musca autumnalis*) - UTAH - Collected at Morgan, Morgan County, August 5, for a new county record. (Hanson, Knowlton).

A CATTLE TICK (*Boophilus* sp.) - TEXAS - During September, one collection from Hidalgo County. (Anim. Health Div.).

STORED PRODUCTS

BROWN SPIDER BEETLE (*Ptinus clavipes*) - IOWA - Found in feed room in Clay County; determined by H. Gunderson. This is a new county record. (Iowa Ins. Sur.).

CADELLE (*Tenebroides mauritanicus*) - COLORADO - Heavy in 1971 stored wheat in grain bin near Haxtun, Phillips County. (Bird).

BENEFICIAL INSECTS

GREEN LACEWINGS (*Chrysopa* spp.) - ARIZONA - Averaged 18 per 100 sweeps of milo in Maricopa County. (Ariz. Coop. Sur.).

HONEY BEE (*Apis mellifera*) - WEST VIRGINIA - Total of 1,116 colonies inspected during September. Of these, 59 dead colonies and 12 diseased with American foulbrood. Two of diseased colonies destroyed. (W. Va. Ins. Sur.).

A EULOPHID WASP (*Encarsia formosa*) - WASHINGTON - Natural population beginning to control severe infestation of *Trialeurodes vaporariorum* (greenhouse whitefly) on tomatoes in greenhouse at Pullman, Whitman County. (Johansen).

MELYRID BEETLES (*Collops* spp.) - ARIZONA - Averaged 30 per 100 sweeps of alfalfa in Maricopa County. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

Pink Bollworm Situation in the Trans-Pecos Area of Texas

Pink Bollworm (Pectinophora gossypiella) populations have continued to build up in the central and Trans-Pecos areas. Infestations generally widespread in Martin, Midland, and Glasscock Counties and Bakersfield area of Pecos County in Trans-Pecos area. Infestations in the Coyanosa area, and westward into Reeves and other cotton-growing counties of Trans-Pecos were noted as being isolated and scattered. During September, increase was noted, but these populations began to build up later this year than in previous years. Most of the cotton in the Trans-Pecos area is 60-70 percent open now, so late bolls in the field are subject to attack. In Midland and Glasscock Counties, and in the Bakersfield area of Pecos County, cotton is still blooming and it is not uncommon to find 10-15 percent rosetted blooms in this area.

Widespread infestations have been noted in central areas. Hill, McLennan, Bell, and Milam Counties have had heavy populations during September. Cotton in these areas is about 75 percent harvested and pink bollworms are being found in the top bolls. Heavy populations were noted in Hardeman County near Chillicothe.

Pink bollworm populations are general throughout the north-central area. (Green et al.).

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Increasing in cotton in southern Eddy County, southern Dona Ana County, and in Hobbs and Lovington area, Lea County. (N.M. Coop. Rpt.). ARIZONA - Pima County growers who discontinued spray schedules, but planning on increased yields from top crop cotton, appear to have lost. Others who maintained spray programs have less than 4 percent infestations. In Bowie and San Simon areas top crop estimated to be 15 percent infested in Cochise County. (Ariz. Coop. Sur.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - New infestation at Matamoros. Specimens found on 3 citrus leaves about half block from Rio Grande. TEXAS - Surveys negative in area treated 3 times at Brownsville, Cameron County. Some eggs found in areas treated twice; apparently these egg nonviable. (PPD).

A FRUIT FLY (Anastrepha nigrifascia) - FLORIDA - Collected 52 adults (20 males, 32 females) in single McPhail trap at Key West, Monroe County. (Pierce).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Adults collected in Porter Township, Lycoming County; third collection for this county. (Gerardi).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single male fly taken in Steiner trap in loquat tree at Pacific Beach, San Diego County. Collected by D.A. Reyes and E. Paddock. Determined by M. Gardner. First collection in San Diego County. Delimiting surveys underway. Detection for larval infestation negative. Area of this find is residential and beach homes; remote from any commercial plantings. (Cal. Coop. Rpt.).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Detection revealed 40 eggs on grape foliage, 1 male and 3 female moths and 3 late instar larvae, at Clovis, Fresno County. (Cal. Coop. Rpt.).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Recovered 5 adults on October 1, and 6 on October 4, from leaves of sweet orange trees in Plymouth area of Orange County. (Chambliss, Venable).

HAWAII INSECT REPORT

Corn - Infestations moderate of mixed populations of POTATO APHID (Macrosiphum euphorbiae) and TUMID SPIDER MITE (Tetranychus tumidus) in about 10 acres of mature seed corn at Kaunakakai, Molokai; trace in 6 acres of seedlings in 2 separate plantings of this crop at same area. (Kawamura).

Fruits and Nuts - BARNACLE SCALE (Ceroplastes cirripediformis) heavy in 1.5 acres of mature passion fruit at Kahului, Maui; as many as 75 scales (mostly young) per inch of pencil size stems. Trace in surrounding 12.5 acres; negligible in about 60 acres of young seedlings at same area. Parasites trace. (Miyahira). COCONUT LEAFROLLER (Hedylepta blackburni) damage moderate to heavy to fronds of old coconut trees from Kamalo through Pukoa, Molokai; as much as 80 percent of fronds on most trees affected; averaged 70 percent. Negligible on same host at Kaunakakai. Damage moderate to heavy of older fronds of 5 coconut trees at Kakaako, Honolulu, Oahu; about 80 percent of fronds affected. Moderate number of unspecified hymenopterous cocoons noted on pinnae. (Kahale et al.). REDBANDED THRIPS (Selenothrips rubrocinctus) moderate to heavy on 95 percent of young leaves of about 100 mango (Mangifera indica) trees at Kahaina, Maui; as many as 100+ nymphs and adults on some heavily infested leaves. (Miyahira).

Forest and Shade Trees - Larvae of a NOCTUID MOTH (Melipotis indomita) moderate under flaky bark of kiawe trees in leeward areas of Molokai; Polistes sp. (a vespid wasp) numerous in area. On Maui, moderate larval populations causing 50 percent defoliation of about 20 monkeypod trees at Sprecklesville. Larval population on Oahu light during September; light trap collections of adults indicated peak in August (323) and decline in September (160). (Kawamura).

Beneficial Insects - Larvae of a TORTRICID MOTH (Apotoforma sp.) infested about 80 percent of young terminal leaves of scattered blackberry growth in 100+ acres at Waikamoi, Maui. This species purposely introduced from Mexico in 1963 to aid in control of blackberry and released on Maui in August 1964. (Miyahira).

Miscellaneous Pests - Adults of a LYGAEID BUG (Neacoryphus bicrucis) light in fluted pinnae of young fronds of 8 roadside coconut seedlings at Kamiloloa, Molokai; as many as 16 adults noted on one frond. Nil on 55 similar host plants at same area. (Kawamura).

DETECTION

New County Records - BROWN SPIDER BEETLE (Ptinus clavipes) - IOWA - Clay (p. 723). FACE FLY (Musca autumnalis) - UTAH - Morgan (p. 723).

LIGHT TRAP COLLECTIONS

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FLORIDA																						
Gainesville 10/1-7			BL	2	1			2	1									4	3	1		1
MISSISSIPPI																						
Stoneville 10/1-7	52-90	41	BL	24				64	22	316							1	20	135	27	108	1185
NEW HAMPSHIRE																						
Lee 9/29	45-55		BL	1														14				1
OHIO																						
Wooster 10/1-7			BL	5			4	2		16						9	13	23		87		4
TENNESSEE (County)																						
Fayette 10/4-8			BL	3				4		23					1	10	5	15	21	4	3	1
Hardeman 10/4-8			BL	18				31		140						17	6	38	9	1	24	4
Lauderdale 10/4-8			BL	22				11	1	74						9	5	7	9	6	6	14
TEXAS																						
Waco 10/1-8			BL	19				191		722							119	116	312	427	180	12
VIRGINIA																						
Holland 9/28-10/1			BL	1						43						1		4			9	
Montgomery 9/29-10/6			BL	3						7				1		1		2			15	
Petersburg 9/25-10/1			BL							10					1							
WISCONSIN																						
Lancaster 9/24-10/4			BL	1						17							70	51		5		
Mazomanie 9/28-10/4			BL	2						6								4		10		

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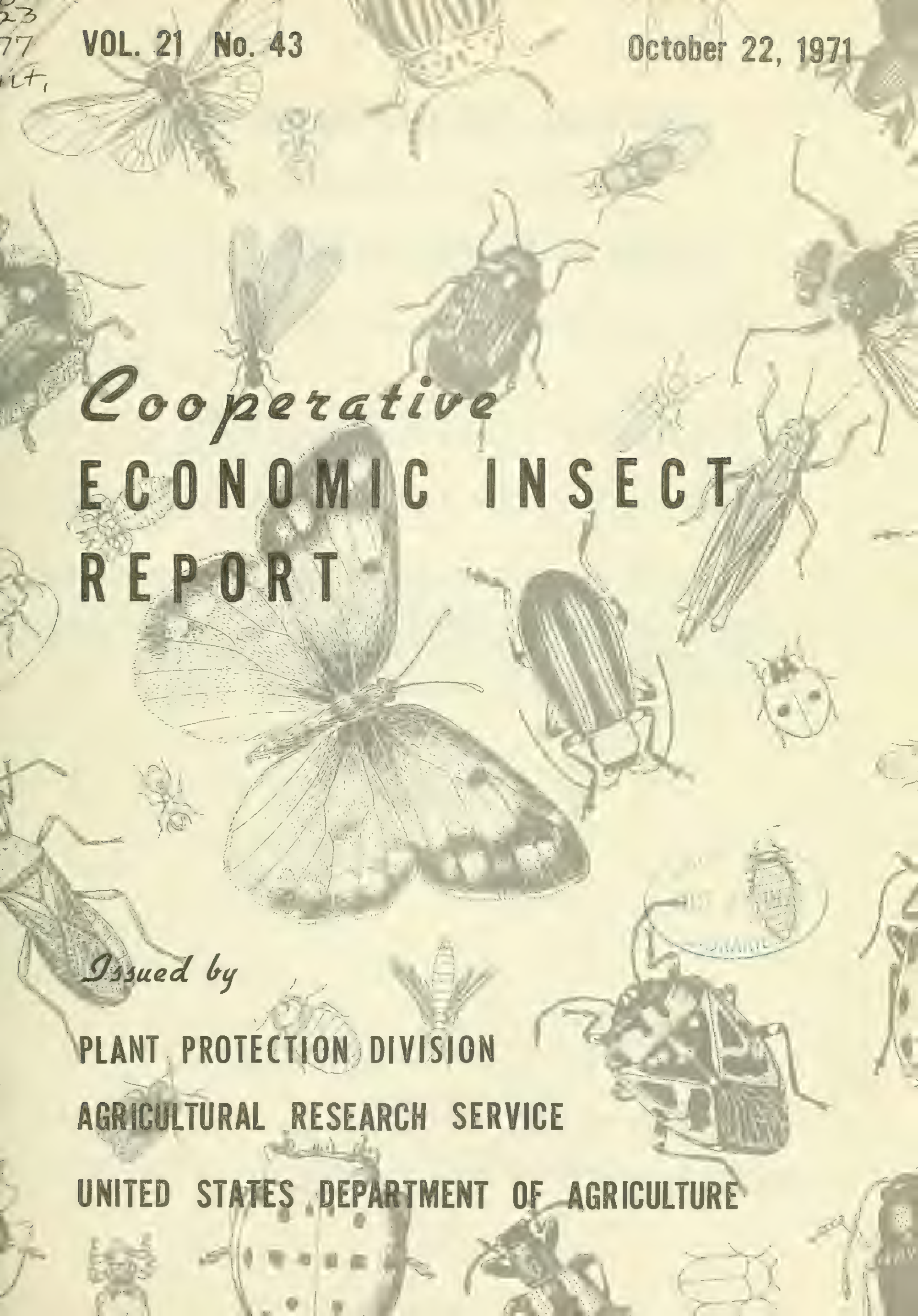

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Economic Insect Survey and Detection
Plant Protection Division, ARS, USDA
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Hyattsville, Maryland 20782

Volume 21 October 22, 1971 Number 43

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

FALL ARMYWORM larvae heavy on small grains in limited area of Oklahoma. Increased on small grains in Rolling Plains of Texas. Remains troublesome on wheat in southeast Arkansas. (p. 729).

THREECORNERED ALFALFA HOPPER girdling some alfalfa in portion of Arizona. (p. 730).

BARK BEETLES increased on pines in South Carolina and North Carolina. (p. 732).

PINK BOLLWORM infestations heavy in Arizona. Increasing in New Mexico. Infestations general throughout central and north-central Texas. (p. 733).

Detection

New State records include TABANIDS from South Carolina. (p. 732).

For new county records see page 734.

Special Reports

Distribution of Vetch Bruchid. Map. (p. 736).

Reports in this issue are for week ending October 15 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER 1971

The National Weather Service's 30-day outlook for mid-October to mid-November is for temperatures to average below seasonal normals over the Great Plains, the upper and middle Mississippi Valley, the upper Great Lakes and west of the Divide except for near normal along the central and south Pacific coast. Above normal averages are indicated for the south Atlantic and east Gulf Coast States while near normal temperatures are expected in unspecified areas. Precipitation is expected to exceed normal from the northern and central Plains to the Appalachians and also over the southern Rockies. Subnormal totals are indicated for the Pacific coast and the south Atlantic coast. Elsewhere near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING OCTOBER 11

Reprinted from Weekly and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Typical autumn weather prevailed over most of the Nation. Heavy snow fell in parts of the west. Torrential rains fell in the Florida Keys.

PRECIPITATION: Bright sunny skies predominated over most of the Nation early in the week. The main exception was the cloud covered Northeast. High pressure systems limited the precipitation to a few showers in opposite corners of the Nation. The Far Northwest, an area from eastern Michigan to western New York, southwest from southeastern Arizona to western Texas and southern Florida. Dry weather and sunny skies prevailed in most of the other areas. A low pressure area southwest of the Florida coast drenched southern Florida and the Keys. Over 8.5 inches of rain fell at the International Airport, Key West, in a 48-hour period ending Wednesday morning. Light showers dampened the Pacific Northwest. Snow fell in the higher Rocky Mountains. On Thursday, showers were scattered from Michigan to the Ohio River. As the weekend approached, snow was falling in

Weather of the week continued on page 736.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN EARWORM (Heliothis zea) - MARYLAND - Feeding damage by this species and Trichoplusia ni (cabbage looper) averaged 10 percent in 400 acres of spinach near Vienna, Dorchester County. Controls applied. (U. Md., Ent. Dept.). VIRGINIA - Larvae 6 per 100 sweeps of alfalfa in Roanoke County field. Most larvae second and third instars. (Allen). MISSISSIPPI - Trapped 431 moths in light trap at Stoneville, Washington County, October 1-7. (Pfrimmer et al.).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Light to moderate on barley in Chaves County. (Mathews). TEXAS - Ranged up to 20 per row foot of wheat in Randall, Deaf Smith, Oldham, and Potter Counties. Heaviest range 0-20 in Deaf Smith County. (Daniels). SOUTH DAKOTA - Trace in 220 acres of winter wheat north of Pierre and south of Okobojo Creek in southwestern Sully County. (Singleton).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - MINNESOTA - Fall survey about 50 percent completed. Shank damage due primarily by second-generation borers much heavier than normal, but ear drop averaged less than 1 percent. Percent shank infestation averaged by district: South-central 45, southeast 23, east-central 10, west-central 33. (Minn. Pest Rpt.). NEBRASKA - Fall surveys complete. Average population heavier than 1970. Decline seen in southeast and northeast, despite large northeast first brood. Drought reduced survival in both areas. In east district, population less than 1970; scattered heavy infestations seen in Butler and Polk Counties, heavy in Kearney, Harlan, Dawson, and Hall Counties. Some central and south district fields showed 19 borers per plant. (Berogan, Keith).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Accounts for 80 percent of population infesting sweet corn, before silking, in Palm Beach County. Damaged 60-80 percent of sweet corn buds in untreated field plots at Belle Glade. (Janes).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TENNESSEE - Heavy in late corn in central areas. Lodging 80 percent in late corn in Weakley County. (Pless).

A GROUND BEETLE (Apristus constrictus) - WASHINGTON - Collected October 4 in yellow trap in Yakima County, for a new county record. Determined by M.H. Hatch. (Landis).

A SCARAB (Euphoria rufobrunea) - WASHINGTON - Collected October 4 in yellow trap in Yakima County, for a new county record. Determined by M.H. Hatch. (Landis).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averaged 12 per square foot in small grain checked in Tillman County. Light in wheat and rye in Nowata County. (Okla. Coop. Sur.). TEXAS - Increased on small grains throughout much of the Rolling Plains area. Damaging in Dickens, Knox, Clay, Fisher, Shackelford, Jones, Foard, Childress, and Wilbarger Counties. Insecticides applied in some areas. (Boring). ARKANSAS - Continues problem on wheat in southeast areas. Infestations observed in Desha County. Very light in east-central areas, but one field treated. (Boyer).

BROWN WHEAT MITE (Petrobia latens) - SOUTH DAKOTA - Ranged 2-16 per leaf; damaged 40 acres of 80-acre field of volunteer barley in southeastern Haakon County. Light on nearby winter wheat. (Jones).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Second generation increasing on grasses in Erath County. Apparently decreasing in south-central area. (Hoelscher, Cole).

YELLOWSTRIPED ARMYWORM (Spodoptera ornithogalli) - TEXAS - Damaged coastal Bermuda pastures in counties near Gonzales County. (Cole).

GRASSWORMS (Mocis spp.) - FLORIDA - M. latipes accounted for 90 percent of population; damage severe to 10-acre pangola grass pasture at Loxahatchee, Palm Beach County and 0.5 to 1 acre spots in pastures at Belle Glade. (Genung).

A DELPHACID PLANTHOPPER (Delphacodes propinqua) - ARIZONA - Moderate to heavy in Bermuda grass seed plots at Yuma, Yuma County. (Ariz. Coop. Sur.).

A STINK BUG (Edessa florida) - VIRGINIA - Adults collected in house in Gloucester County October 6 by F.B. Goode. Determined by R.L. Hoffman. This is a new county record. (Allen).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Generally light in most alfalfa in southern areas. Larvae ranged 5-7 per 25 sweeps in some areas. (N.M. Coop. Rpt.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy in alfalfa in Pontotoc County. Few fields to be treated. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Adults 6 per 25 sweeps in Montgomery and Roanoke County alfalfa. (Allen).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: Gila Valley 200, Yuma Mesa 400, and Yuma Valley 500. Girdling noted in some established stands. (Ariz. Coop. Sur.).

PEA APHID (Acyrthosiphon pisum) - WISCONSIN - Populations light and expected to remain light in western Dane County. Of specimens noted, 37 percent parasitized, diseased or male, 20 percent, alate viviparae or developing wing pads, 43 percent, viable apterate viviparae. No oviparous forms noted. (Wis. Ins. Sur.). NEW MEXICO - Ranged 25-75 per square foot in some newly seeded alfalfa in Chaves County. (Mathews).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Heaviest overwintering populations in 4 years emerging from pupation in matured soybean acreage near Salisbury, Fruitland, and Sharptown areas of Wicomico County. Flights of adults heavy in most wooded areas in this section. Flight activity also heavy in the Stockton and Girdletree areas of Worcester County. (U. Md., Ent. Dept.). NORTH CAROLINA - Defoliation still heavy in Coastal Plains. Defoliation 50+ percent in some areas of Hoke and Robeson Counties. Critical period ended except for very late soybeans. (Baxley).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Extensive boll damage observed in Throckmorton, Wilbarger, Tom Green, and Hardeman Counties. (Boring). ARKANSAS - Live weevils still in fields in east-central areas. Diapause control applied in southeast and central areas. Some diapause control in east-central areas. (Boyer).

BOLLWORM (Heliothis zea) - TEXAS - Continues to damage cotton in Wilbarger and Young Counties. Moderate in some fields in Tom Green County. Feeding in small bolls and should not cause appreciable economic damage. (Boring).

POTATOES, TOMATOES, PEPPERS

LESSER BULB FLY (Eumerus tuberculatus) - COLORADO - This species and Rhizoglyphus sp. (a bulb mite) damaged potatoes in Monte Vista, Rio Grande County. (Thatcher, Harrison).

GENERAL VEGETABLES

A SPHINGID (Herse cingulata) - NEW HAMPSHIRE - Single male moth collected at street light at Dover, Strafford County. This is second specimen taken in 25 years of light trap operation. (Groman).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - CALIFORNIA - Infesting English walnuts in Meiners Oaks. Ventura County. Will be more of problem in walnuts this season because growers failed to apply first treatment which usually is combined with aphid control. (Cal. Coop. Rpt.). See CEIR 21(41):712. (PPD).

WALNUT HUSK FLY (Rhagoletis completa) - IOWA - Collected at Thompson, Winnebago County for a new county record, September 30. Determined by J.L. Laffoon. (Iowa Ins. Sur.).

EUROPEAN EARWIG (Forficula auricularia) - MASSACHUSETTS - Abundant on unpicked applies, and in many injured apples still on trees in Hampshire County. (Jensen).

CITRUS

Quarterly Insect and Mite Outlook in Florida - October through December - This Outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau 30-day Outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect and Disease Summary" usually released twice each month by this Center.

CITRUS RUST MITE (Phyllocoptruta oleivora) will continue in high range through December with about 22 percent of groves developing heavy infestations. Increase will occur through November with gradual decrease expected thereafter. CITRUS RED MITE (Panonychus citri) and TEXAS CITRUS MITE (Eutetranychus banksi) will increase through December. Although population generally predicted to remain in low range, rapid increases may be expected in young groves and heavy infestations likely in 6 percent of groves. WHITEFLIES will continue to be abundant through October, then decrease to moderate level. GLOVER SCALE (Lepidosaphes gloverii), PURPLE SCALE (L. beckii), and YELLOW SCALE (Aonidiella citrina) will slowly increase; however, none expected to occur in important numbers. BLACK SCALE (Saissetia oleae) population will continue to be above normal and at moderate level through November; however, little damage will result this year. AN ARMORED SCALE (Unaspis citri) will produce crawlers until near-freezing temperatures slow their activity. Spread of infestation to new areas predicted due to crawlers transported by picking crews. (W. A. Simanton).

ORNAMENTALS

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Survey of ornamental birches in Pendleton, Umatilla County, detected infestation in eastern sector of city. Previously, infestations in southwest sector. (Westcott, Penrose).

CRANBERRY SPANWORM (Anavitrinella pampinaria) - ARIZONA - Controls difficult in many instances in Maricopa County. (Ariz. Coop. Sur.).

HAWTHORN LACE BUG (*Corythucha cydoniae*) - PENNSYLVANIA - Adults infested Crataegus *Crataegus phaenopyrum* at Kettanning, Armstrong County, October 1 (Henry). Determinations by E. Simons. This is a new county record. Adults infested *Crataegus monogyna stricta* at Gibraltar, Berks County, September 30. (Wolf).

A LACE BUG (*Stephanitis takeyai*) - PENNSYLVANIA - Adults moderate on *Pieris japonica* at Kimberton, Chester County, October 1; adults light on *P. japonica* at Media, Delaware County, September 30, for new county records; adults heavy (treated in July) at Audubon, Montgomery County, October 6; heavy on azalea (yellowing) in nursery at Glen Mills, Delaware County, September 30. Determinations by E. Simons. (Christie).

FOREST AND SHADE TREES

BARK BEETLES (*Dendroctonus* spp.) - SOUTH CAROLINA - Populations of *D. terebrans* (black turpentine beetle) and *D. frontalis* (southern pine beetle) increasing on pines in Oconee, Aiken, and surrounding counties. (Fox). NORTH CAROLINA - *D. frontalis* increased in Durham, Person, and Granville Counties. In other areas, activity remains about same or less than earlier in 1971. Salvage control continues. (N.C. For. Ser. Newsltr.).

A WEEVIL (*Pissodes* sp.) - WEST VIRGINIA - Adults damaged 80 percent of Scotch pine in 2-acre plantation in Ritchie County. (W. Va. Ins. Sur.).

A LECANODISPIDID SCALE (*Lecanodiaspis prosopidis*) - UTAH - Heavy on ash twigs at Moab, Grand County, September 1. Collected by G.F. Knowlton and R.S. Roberts. Determined by M. Kosztarab. (Knowlton).

VARIABLE OAKLEAF CATERPILLAR (*Heterocompa manteo*) - OKLAHOMA - Moderate on oaks in Tulsa County. Light on pin oak in Stillwater area, Payne County. (Okla. Coop. Sur.). TEXAS - General larval infestations in oaks throughout northeast area. Isolated infestations on oaks in Travis and Montgomery Counties. (Lackey, Green).

FALL WEBWORM (*Hyphantria cunea*) - NEW MEXICO - Heavy on cottonwood trees and other shade trees statewide. Some with as many as 10 webs per tree. (N.M. Coop. Rpt.).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 39 cases reported in U.S. October 10-16, as follows: TEXAS - Bandera 1, Brewster 3, Edwards 4, Hidalgo 1, Kinney 3, Maverick 2, Real 1, Starr 1, Terrell 4, Uvalde 2, Val Verde 7, Bell 1, Brown 2, Kendall 2, Lampasas 1, San Saba 1, Sutton 2, Travis 1. Total of 295 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 29, Chihuahua 128, Coahuila 67, Nuevo Leon 18, Tamaulipas 53. Total of 92 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 66,298,000; Arkansas 1,260,000; Arizona 3,646,000; Mexico 108,592,000. (Anim. Health Div.).

TABANIDS - SOUTH CAROLINA - Adult females of *Tabanus cymatophorus* recovered in Newberry County in June and *Agkistrocerus megerlei* from Sumter, Berkeley, and Charleston Counties by C. Sheppard during July 1971. Determined by L.L. Pechuman. These are new State records. (McCaskill).

MOSQUITOES - MINNESOTA - Light trap operations for season completed by Metroplitan Mosquito Control District on October 1. *Aedes vexans* accounting for 640 or 75 percent of 867 female mosquitoes taken during week in 16 traps. Other species taken included *Culex restuans*, *Culiseta inornata*, *C. morsitans*, and *Anopheles walkeri*. Special sampling for *Coquillettidia perturbans* larvae produced 11 postive samples. In evening and daytime bite collections *A. vexans* accounted for over 90 percent of collection. Some single-brooded *Aedes* such as *A. excrucians*, *A. stimulans*, and *A. fitchii* also taken. (Minn. Pest Rpt.).

A COMBFOOTED SPIDER (Latrodectus hesperus) - NEVADA - Numerous specimens moving into homes, garages, and other buildings in southern Washoe County. (Nev. Coop. Rpt.).

STORED PRODUCTS

POTATO TUBERWORM (Phthorimaea operculella) - CALIFORNIA - Larvae 3 per tuber in potatoes at packing shed in Oxnard, Ventura County. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

A FLEA BEETLE (Longitarsus jacobaeae) - OREGON - About 250 adults released for control of tansy ragwort (Senecio jacobaea) at 2 sites period ending October 8, in Tillamook and Lane Counties. (Penrose, Westcott).

A WEEVIL (Phrydiuchus tau) - OREGON - About 100 adults released for control of Mediterranean Sage, Salvia aethiopis in Lakeview area, Lake County, October 5. This species is from Turkey and Yugoslavia and should be better adapted to climate than the previously released, P. spilmani. (Goeden).

A BRACONID - MISSISSIPPI - Unspecified braconid appears very heavy on Sibine stimulea (saddleback caterpillar) and on last generation of Ceratomia catalpae (catalpa sphinx) in Oktibbeha County. Parasitizing 90-100 percent of population. (Robinson).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - All forms found in dooryard citrus in regulated area extending 6 blocks south of treatment area to within 0.25 mile of large commercial citrus orchard at Brownsville, Cameron County. (PPD).

AN ENCYRTID WASP (Ooencyrtus kuwanai) - SOUTH CAROLINA - This egg parasite released at Myrtle Beach State Park, Horry County, in close proximity to trap site where one male Porthetria dispar (gypsy moth) trapped earlier this year. (McKee).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - As of October 18, total of 7 moths trapped in Tulare County and one in Kern County during 1971 season. (PPD). ARIZONA - Infestations of Pima variety cotton ranged 70-100 percent in Graham County. This and boll rot reduced yields in this area. Larval counts per bale at lint cleaners in Yuma County: 4-7 at Yuma and 40 at Parker. (Ariz. Coop. Sur.). NEW MEXICO - Increasing on cotton in Eddy, Dona Ana, Luna, and Lea Counties. (N.M. Coop. Rpt.). TEXAS - General infestations noted throughout central and north-central areas. Heavy infestations in some fields in Tom Green County near San Angelo. (Boring). LOUISIANA - Single moths recovered in each of 3 traps in Rapides Parish. (PPD).

DETECTION

New State Records - TABANIDS - SOUTH CAROLINA - (Tabanus cymatophorus and Agkistrocerus megerlei) Newberry County and Sumter County, respectively. (p. 732).

New County Records - A GROUND BEETLE (Apristus constrictus) WASHINGTON - Yakima (p. 729). HAWTHORN LACE BUG (Corythucha cydoniae) PENNSYLVANIA - Armstrong (p. 732). A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Chester, Delaware (p. 732). A SCARAB (Euphoria rufobrunea) WASHINGTON - Yakima (p. 729). A STINK BUG (Edessa florida) VIRGINIA - Gloucester (p. 730). WALNUT HUSK FLY (Rhagoletis completa) IOWA - Winnebago (p. 731).

HAWAII INSECT REPORT

Sorghum - Cryptoblabes aliena (a phycitid moth) larvae and Rhopalosiphum maidis (corn leaf aphid) moderate to heavy in 2,000+ acres of sorghum at Kilauca, Kauai; as many as 325 larvae and pupae of C. aliena per single panicle. R. maidis heavy in several fields, obscuring portion of some flowering panicles. Larvae and adults moderate of Coelophora inaequalis (a lady beetle) in R. maidis infested fields. Contarinia sorghicola (sorghum midge) light in most plantings, heavy in 60-acres, seed yield near zero. Parasitism by Eupelmus poppa (an eupelmid wasp) about 5 percent of random C. sorghicola infested material. (Kawamura).

Turf, Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) infestation of Kikuyu and pangola pastures moderate at Pahoa, Hawaii; adults of Casinaria infesta (an ichneumon) and Eucelatoria armigera (a tachnia fly) moderate. H. licarsisalis no larval activity at Hana and Ulupalakua, Maui; adults light. (Yoshioka, Miyahira).

General Vegetables - BEAN FLY (Melanagromyza phaseoli) heavy on backyard snap bean plantings at Palolo, Oahu; 100 percent of seedlings severely affected. On Maui, field collected yardlongbean material showed percentage parasitism by Opius sp. (a braconid) and Halticoptera patellana (a pteromalid wasp) respectively: Waikapu 85 and 15; Puunene 25 and 25. On Kauai, field collected cowpea and snap bean material revealed parasitism from 88 to 100 (average 97) percent; mostly by Opius sp. Infested long and snap bean material collected at Waimanalo, Oahu, during September revealed light parasitism by H. patellana. Of 20 infested petioles collected emergence of M. phaseoli and H. patellana, respectively: 99 and 13 from infested long beans; 201 and 2 from infested snap beans. (Miyahira et al.).

Forest and Shade Trees - Infestations of AN ADELGID (Pineus pini) light to trace on Pinus radiata and P. elliottii at Waikii, Hawaii; also noted on Pinus spp. along Saddle Road and residences at Paauilo, Honokaa, and Kamuela. Treatment applied or recommended. On Oahu and Maui, eradication efforts continue. Survey on Kauai and Molokai negative. (Yoshioka, Kawamura).

General Pests - NARROW WINGED KATYDID (Elimaea punctifera) damage to anthurium flowers, citrus fruits, and foliage continues at Pahoa, Hawaii. Less damage occurred on anthurium flowers and in backyard plantings of cucumber and snap beans at Hilo. About 30 percent of field collected E. punctifera eggs at Pahoa parasitized by Ufens elimaeae (a trichogrammatid wasp) small numbers of another parasite, Anastatus koebelei (an eupalmid wasp) also emerged from this host material. (Matayoshi).

Man and Animals - Trapped 75 VEXANS MOSQUITO (Aedes vexans nocturnus) and 869 SOUTHERN HOUSE MOSQUITO (Culex pipiens quinquefasciatus) in 55 light traps during September on Oahu. Aedes ranged up to 62 per trap at Kahaluu. Culex ranged up to 229 per trap at Sunset Beach. (Mosq. Contr. Br. Dept. of Health). During September GIANT AFRICAN SNAIL (Achatina fulica) baiting resumed on Kauai; 36 snail collected and destroyed. Snail activity at Wahiawa negative. (Sugawa).

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation (inches)	Type of trap BL blacklight I incandescent MV mercury vapor O other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA Gainesville 10/8-14			BL	4	1			8	5	5									4	3	1	6		
MISSISSIPPI Stoneville 10/8-14	45-83	trace	2BL	68				67	13	533								4	55	68	28	25	31	
MISSOURI (County) Platte 10/7-13				11		1				18						1		14	38		69	2		
OHIO Wooster 10/8-14			BL	3						2								12	11		84		4	
TENNESSEE (County) Hardeman 10/11-15			BL	13				5										4	23	1	3	4	1	
TEXAS Waco 10/7-15			BL	14				71										94	94	95	274	19	5	
WISCONSIN Hancock 9/28-10/12			BL	3						14								6	9		18			
Lancaster 10/5-13			BL							4								4	1					

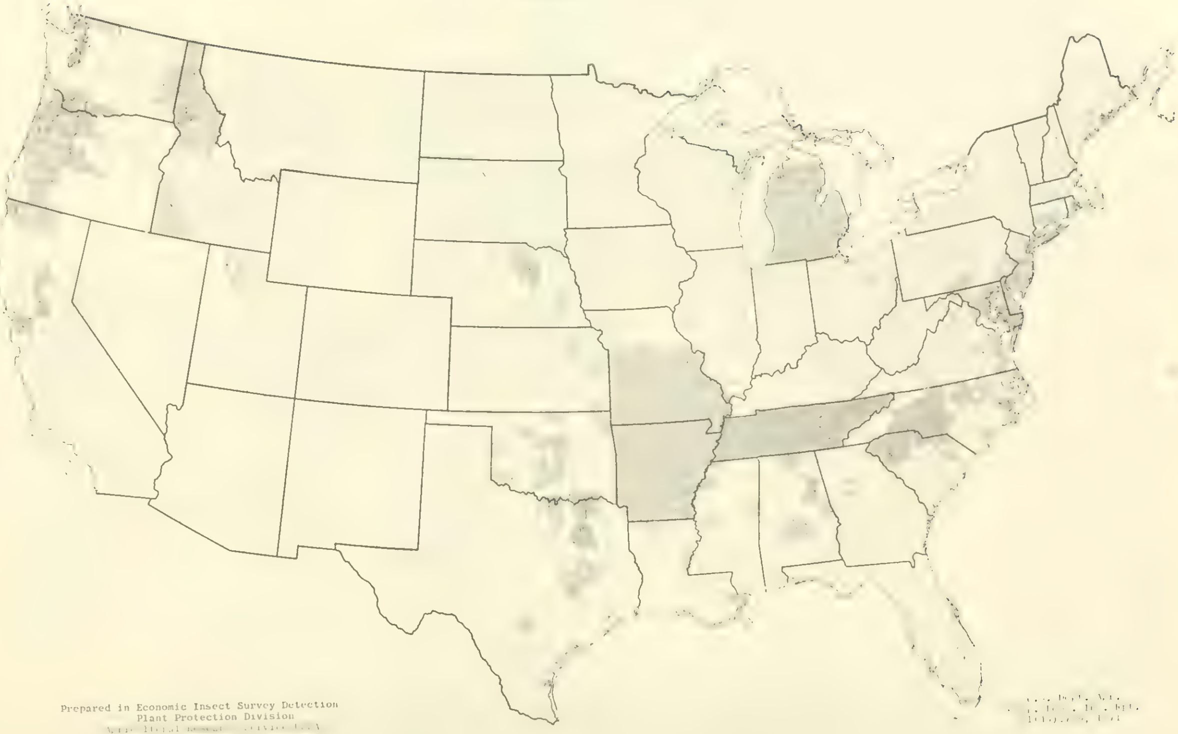
Weather of the week continued from page 728.

western Montana. Storms centered over Austin, Nevada, Saturday, and 11 inches fell at Flagstaff, Arizona, Saturday and Sunday. This was the heaviest October snowstorm in more than half a century at Flagstaff. In 1920, an October storm dumped 19 inches of snow at Flagstaff. Heavy snow and accompanying winds slowed automobile travel in parts of the Great Basin, Rocky Mountains, and western Great Plains. Thunderstorms occurred in southern California and severe thunderstorms and tornadoes caused minor damage in northeastern Colorado and western Nebraska. A few persons were injured by a tornado at Wray, Colorado.

TEMPERATURE: Clear crisp autumn weather prevailed over most of the Nation last week. The main exception was the West. Portions of Montana warmed to the 70's Wednesday afternoon and sunny southern California warmed to the upper 90's. Imperial, California, registered 102° Tuesday afternoon. Several surges of cool air pushed southward over the central and eastern portions of the Nation. McComb, Mississippi, registered 39° Monday morning and on Tuesday, Tallahasee, Florida, recorded 42°. Subfreezing weather occurred on most mornings in the high Rocky Mountains and over the nearby Great Plains on 1 or 2 mornings. Wednesday, temperature at Sydney, Nebraska, plunged to a cool 23° by midweek. The heat wave ended in northern and central California. Brisk southerly winds warmed the central Great Plains. Temperature at Des Moines, Iowa, climbed to 86° Thursday afternoon, 23° warmer than the previous day. The weekend brought cold, wintry weather to the northern Great Plains. Temperatures at some stations in Montana did not rise above 32° Friday nor Saturday. The Great Basin was especially cold Sunday morning when the temperature at Austin, Nevada, plunged to 15°. The temperatures averaged below normal from Washington to central California and northeastward to northern Minnesota, above normal from southern California to Wisconsin, and southward and eastward to the Gulf of Mexico and the Atlantic Ocean.

Distribution of Vetch Bruchid

Bruchus brachialis



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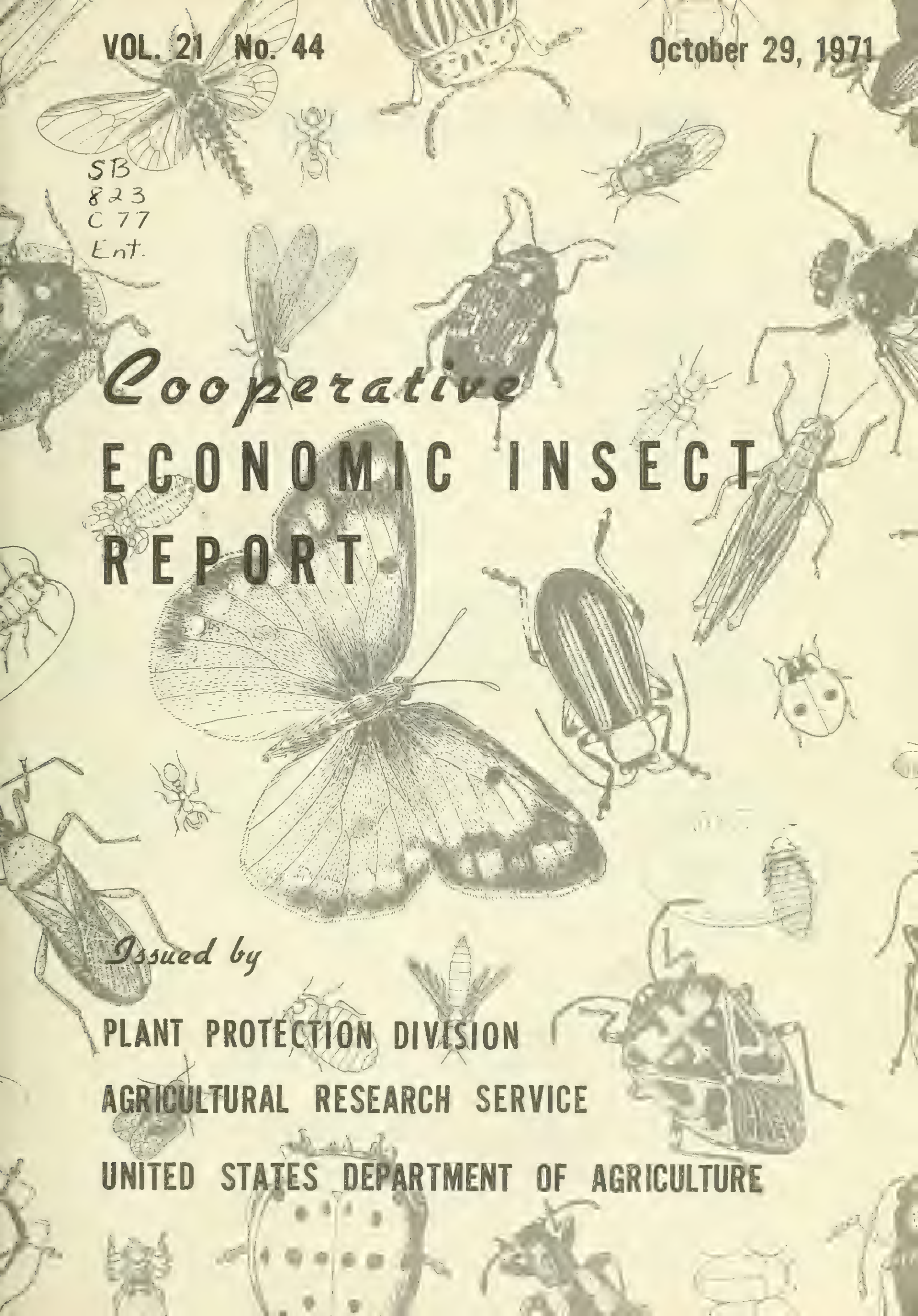

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 Number 44

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG spread in Washington. Infestations noted in New Mexico and Texas. (p. 739).

FALL ARMYWORM larvae damaged small grain in Oklahoma and wheat in limited area of Mississippi. LESSER CORNSTALK BORER damaged wheat in one area of Oklahoma. HESSIAN FLY heavy in wheat in portion of Kentucky. (p. 739).

COTTON LEAFPERFORATOR larvae economic on cotton in portions of Texas. (p. 740).

GYPSY MOTH defoliated almost 2 million acres of woodlands in the Northeastern States in 1971. (p. 743).

Detection

New State records include a LACE BUG from California and a MEGALOPYGID MOTH from Tennessee. (p. 742).

For new county records see page 743.

Special Reports

Distribution of Oldhouse Borer. Map. (p. 746).

During the months of November, December, and January, there will be one issue per month of the CEIR. This action is being taken because of the reduced insect activity during these months and the need for the editorial staff to concentrate on special projects.

Reports in this issue are for week ending October 22 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING OCTOBER 25

Reprinted from Weekly and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: The West continued cool and warm weather prevailed over the East. Some heavy rains in Virginia and over much of North Carolina.

PRECIPITATION: Snow fell in the Rocky Mountains and cold rain fell over the western Great Plains, in connection with a low pressure area centered over northeastern Colorado Monday October 18. Two inches of snow fell at Flagstaff, Arizona, Monday morning, bringing the total snow depth to 11 inches. Rainfall amounts ranged widely from less than 0.25 inch to more than 3 inches. Some of the larger amounts were Bismarck, North Dakota, 1.62 inches. Rain also fell in the warm humid air along the Gulf. About midweek, rain began spreading inland along the north Pacific coast, in connection with an approaching offshore disturbance. Heavy rains fell from Missouri to Texas at midweek. Daily totals at numerous stations in northeastern Texas exceeded 3 inches. Fort Worth received 2.64 inches Tuesday. Dallas received 2.55 in 24 hours and 1.32 inches in 1 hour. Heavy rains caused important rises along rivers and some flooding. Lighter rains also fell at midweek in Wisconsin, Iowa, Illinois, and over the Atlantic Coastal States from Virginia to Florida. Light rains fell almost daily in the Pacific Northwest with weekly totals ranging from 0.25 inch or less over inland sections to over 4 inches near Puget Sound. Snow fell in the mountains above about 5,000 or 6,000 feet.

TEMPERATURE: Early in the week, the low pressure center moved from northeastern Colorado to Manitoba. Cold air whistled southward west of system, and warm humid but pleasant weather prevailed over eastern half of the country. On Monday, maximum temperatures over the West ranged from the 40's over the Great Basin to the 60's in southwestern deserts. The mercury climbed to 65° at Phoenix, Arizona, and to only 31° at Flagstaff. On Tuesday morning, Flagstaff with a temperature of 6° was one of the coldest spots in the Nation. This is the coldest temperature of record for Flagstaff so early in the autumn. East of the system, afternoon temperatures reached the 70's as far north as the Dakotas, 77° at Aberdeen, South Dakota, Monday afternoon. The high 70's and 80's were common from the central Great Plains to the Gulf of Mexico. New England near the center of a high pressure area warmed to the 60's Monday. Temperature contrast between the cold West continued through most of the week. Chicago, Illinois, warmed to 84° Tuesday afternoon and subfreezing weather pushed far southward into New Mexico, where Roswell registered 32° Wednesday morning. The Southwest warmed at midweek.

Weather of the week continued on page 744.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (*Euxoa auxiliaris*) - KANSAS - Early October blacklight trap catches indicated flight in central and west-central areas. (Bell).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - OKLAHOMA - Light, 0-8 per square foot, in small grain in Major County. Heavy, probably this species, in wheat in McClain County. (Okla. Coop. Sur.).

CORN EARWORM (*Heliothis zea*) - KANSAS - Statewide survey conducted during September in field corn. Total of 51 of 105 counties included in survey. Greatest yield losses occurred in 3 central crop reporting districts (2.1 to 2.6 percent). (Bell).

GREENBUG (*Schizaphis graminum*) - WASHINGTON - Distribution increased, with most notable infestations in Benton and Franklin Counties; reported as far north as Lind in Adams County. Ranged 200-400 per row foot in few fields in these areas, October 14. Expect about 10,000 acres to need treatment if increases continue. (Klostermeyer). NEW MEXICO - Ranged 0-2 per linear foot of wheat in Quay and Curry Counties. (Mathews). TEXAS - Infestations observed in Cottle, Motley, and Dickens Counties. Some controls applied. (Boring).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Few larvae observed in late corn at Delta, Clay County. This is a new county record. Light in corn examined in Clay, Randolph, Tallapoosa, and Elmore Counties . (McQueen, Oct. 15). KANSAS - Fall survey showed that percent infested stalks about same as found in 1970. With exception of east-central district, populations generally lower than in 1970. (Bell).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - KENTUCKY - Collected in Edmondson, Simpson, and Allen Counties. These are new county records. (Barnett). KANSAS - Survey in southeast and south-central districts during September indicated populations lower in 1971 than in 1970. (Bell).

SORGHUM MIDGE (*Contarinia sorghicola*) - TENNESSEE - Continues heavy (15+ per head) in late milo in western areas. (Locke, Gordon).

SMALL GRAINS

FALL ARMYWORM (*Spodoptera frugiperda*) - TEXAS - Infestations did not develop in northern area as expected. Damage continues in Rolling Plains area. (Turney, Boring). OKLAHOMA - Larvae, 20 per linear foot, destroyed large wheatfield in Tonkawa area, Kay County. Ranged up to 20 per linear foot in Major County. Controls planned. Counts of 4 per square foot in Osage County. Heavy in Johnston, Love, Cotton, and Mayes Counties. Destroyed 30 acres of oats in Johnston County. Some spraying reported in Lincoln and McClain Counties. Moderate in Alfalfa, Canadian, and Coal Counties and light in Bryan County. (Okla. Coop. Sur.). MISSISSIPPI - Larvae defoliated field of wheat in Grenada County. (Robinson). ALABAMA - Light in scattered spots on rye in 100-acre field in Covington County. Volunteer corn in this field destroyed by larvae. Many larvae killed by predators. (Huggins).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - OKLAHOMA - Heavy on wheat in Roger Mills County. Damage severe in sandy fields. (Okla. Coop Sur.).

HESSIAN FLY (*Mayetiola destructor*) - KENTUCKY - Heavy infestation on wheat planted in mid-September in Fayette County. (Barnett).

MOLE CRICKETS (*Scapteriscus* spp.) - FLORIDA - Damaged newly planted wheat and oats in experimental fields at Quincy, Gadsden County. (Greene).

TURF, PASTURES, RANGELAND

CHINCH BUGS (Blissus spp.) - TEXAS - Heavy infestations of B. insularis (southern chinch bug) in Brazos, Burleson and several south-central counties. (Cole, Green). WEST VIRGINIA - B. leucopterus leucopterus adults caused heavy damage to lawn in Braxton County. (W. Va. Ins. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Continues moderate in Bermuda grass in Johnston, Bryan, and Love Counties. (Okla. Coop. Sur.).

GRASSHOPPERS (Melanoplus spp.) - TENNESSEE - Mainly M. femurrubrum and M. differentialis caused heavy damage to fescue and clover pasture in Hardeman County. Controls recommended. (Locke).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - KENTUCKY - Adults 105 and larvae 460 per 100 sweeps of alfalfa in Fayette County. Damage noted. (Barnett).

CLOVER LEAF WEEVIL (Hypera punctata) - KENTUCKY - Adults 20 per 100 sweeps of alfalfa in Fayette County. (Barnett).

PEA APHID (Acyrthosiphon pisum) - NEW MEXICO - Slight increase, counts 25-50 per 25 sweeps of alfalfa in Quay County. (Mathews). KENTUCKY - Adults and nymphs 235 per 100 sweeps of alfalfa in Fayette County. (Barnett).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae 6-8 per 25 sweeps of alfalfa near Tucumcari, Quay County. (Mathews).

PEANUTS

REDNECKED PEANUTWORM (Stegasta bosqueella) - NEW MEXICO - About 10 percent of terminals infested in fields checked in Roosevelt County. (Mathews).

COTTON

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Still heavy on top bolls and squares in all cotton examined in Lee, Chambers, Bullock, Crenshaw, Butler, and Covington Counties. From 1 to 3 top bolls per plant opening or trying to open in most fields with 1 to 4 locks damaged by young weevils and rot. (McQueen).

BEET ARMYWORM (Spodoptera exigua) - ALABAMA - Larvae, 1-5 per plant, defoliated late field of cotton in Covington County, especially new growth. (Foshee).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - TEXAS - Heavy on cotton in some areas of Pecos and Reeves Counties. Some economic damage observed. (Neeb).

POTATOES, TOMATOES, PEPPERS

WHITEFLIES - NEW MEXICO - Unspecified species problem on tomatoes in commercial greenhouses at Corrales, Sandoval County. Very difficult to control. (Heninger).

COLE CROPS

THRIPS - WISCONSIN - Currently unverified, suspect Thrips tabaci (tobacco thrips) caused more trouble to cabbage growers than originally indicated. In southeastern area many acres of earlier varieties plowed up due to market rejection. (Wis. Ins. Sur.).

GENERAL VEGETABLES

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Major problem of many lettuce growers in Salt River Valley. Controls not satisfactory in many cases in Maricopa County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Egg counts heavy on young lettuce and depending on weather conditions could become serious problem at Yuma, Yuma County. (Ariz. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

ORIENTAL FRUIT MOTH (Grapholitha molesta) - CALIFORNIA - Heavy mining in twigs of pears in Kearney, Fresno County. (Cal. Coop. Rpt.).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - UTAH - Severe in pear orchard at Brigham City, Box Elder County, heavy on fruit, twigs, and petioles (Davis, Knowlton); apricots damaged at La Verkin, Washington County. (Roberts).

PECAN WEEVIL (Curculio caryae) - MISSISSIPPI - Larvae 3 per 100 nuts sampled from orchard in Newton County. Some larvae entering soil. (Robinson).

TWIG PRUNER (Elaphidionoides villosus) - OKLAHOMA - Damage heavy to small limbs (up to 2 inches in diameter) of pecan in area in southern Atoka County and in Bennington area, Bryan County. (Okla. Coop. Sur.).

WALNUT CATERPILLAR (Datana integerrima) - ARKANSAS - Populations heavier than usual. Many walnut trees completely defoliated in north and west areas. (Boyer).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Infested commercial walnut orchard for first time near Dundee, Yamhill County. Most larvae left husks and entered ground to overwinter. (Roberts, Larson).

CITRUS

Citrus Insect Situation in Florida - Mid-October - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 88 (norm 67) percent of groves; economic in 69 (norm 41) percent. Population above average and very high. Infestations of similar magnitude on leaves and fruit. Further increase expected until mid-November. Highest districts west, south, north, and central. East low. CITRUS RED MITE (Panonychus citri) infested 26 (norm 23) percent of groves; economic in 3 (norm 5) percent. Population still normal and in low range but started upward trend which will persist through November. Rapid increase may be expected in about 5 percent of groves. Highest districts west, north, and south. TEXAS CITRUS MITE (Eutetranychus banksi) infested 23 (norm 18) percent; economic in 3 (norm 4) percent. Starting to increase from normal low level. Heavy infestations likely to build up rapidly in scattered groves during next 2 months. Highest district west. GLOVER SCALE (Lepidosaphes gloverii) infested 56 (norm 56) percent of groves; economic in 4 (norm 7) percent. Increased but still below normal abundance and in low range. Gradual increase expected. Highest districts west and south. PURPLE SCALE (L. beckii) infested 46 (norm 53) percent of groves; economic in 1 (norm 2) percent. CHAFF SCALE (Parlatoria pergandii) infested 32 (norm 37) percent of groves; economic in 1 (norm 2) percent. YELLOW SCALE (Aonidiella citrina) infested 14 (norm 52) percent of groves; economic in none (norm 6 percent). Populations of these scales at low level in nearly all districts. Little change expected. BLACK SCALE (Saissetia oleae) infested 61 (norm 35) percent of groves; economic in 30 (norm 13) percent. Population at highest level on record for October. It consists mostly of low or moderate infestations with very few heavily infested groves. Little change expected until cool weather. Highest districts central, east, and south. AN ARMORED SCALE (Unaspis citri) 27 percent of groves; 20 percent moderately or heavily infested. Population will remain spotty and near level of past few months. Activity will become less with onset of cooler weather. WHITEFLIES infested 91 percent of groves; economic in 30 percent. Populations of eggs, larvae, and adults increased and now in high range and much above normal. Decrease expected in November. All districts high. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

ORNAMENTALS

A LACE BUG (Corythucha montivaga) - CALIFORNIA - About 100 adults per leaf on wyethia plants in Mono County. Collected by E. Paddock on July 29, 1971. Determined by G. Buxton, confirmed by R.C. Froeschner. This is a new State record. Occurs in Montana, Wyoming, and Utah. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

WESTERN PINE TIP MOTH (Rhyacionia bushnelli) - CALIFORNIA - Survey indicates positive finds in "Sea World" at Pacific Beach, San Diego County. Extends distribution several miles north of previously known infestations. (Cal. Coop. Rpt.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ARKANSAS - Heavy in pine in Saline and Hempstead Counties. (Boyer).

A MEGALOPYGID MOTH (Norape ovina) - TENNESSEE - Larvae damaged redbud in Knox County, September 24, 1971. Collected and determined by R.P. Mullett. This is a new State record. (Gordon).

POPLAR TENTMAKER (Ichthyura inclusa) - PENNSYLVANIA - Larvae caused up to 100 percent defoliation to 20 Salix babylonica in Westmoreland County and about 4 trees in Indiana County. (Barret, Henry).

AN APHID (Stegophylla quercina) - MARYLAND - Heavy on southern red oak (Quercus falcata) on June 1 near Salisbury, Wicomico County. Determined by T. Bissel. This is a new county record. (U. Md., Ent. Dept.).

PINE BARK APHID (Pineus strobi) - VIRGINIA - Nymphs heavy on white pines at commercial plant in independent city of Danville. (Allen).

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Survey in Pendleton, Umatilla County, nearly complete. Indicate infestations in all sections. Infestation not general. (Westcott, Penrose).

WALKINGSTICK (Diapheromera femorata) - ARKANSAS - General in western area hardwoods. Mating occurred past 2 weeks, egg laying underway. (Boyer).

MAN AND ANIMALS

HORN FLY (Haematobia irritans) - FLORIDA - Averaged about 17 per head on dairy cattle near Gainesville, Alachua County. (Butler). OKLAHOMA - Counts of 800 per cow and 1,500 per bull in Payne County and ranged 800-1,200 per head in Marshall County. Heavy in Cotton and Lincoln Counties and moderate in Cleveland and McClain Counties. (Okla. Coop. Sur.).

NORTHERN CATTLE GRUB (Hypoderma bovis) - ILLINOIS - Found in Ogle, Schuyler, Madison, Perry, St. Clair, and Williamson Counties. Collected by S. Moore, determined by D. Webb. These are new county records. (Ill. Ins. Rpt.).

SCREWWORM (Cochliomyia hominivorax) - Total of 33 cases reported in U.S. October 17-23 as follows: TEXAS - Brewster 1, Hidalgo 1, Jeff Davis 2, Kinney 3, Terrell 3, Uvalde 1, Val Verde 5, Bowie 1, Burnet 1, Concho 1, Hays 1, Lampasas 6, Lee 1, San Saba 3, and Sutton 3. Total of 334 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 11, Chihuahua 190, Coahuila 64, Nuevo Leon 15, Tamaulipas 54. Total of 87 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 61,988,000; Arizona 2,820,000; Mexico 167,004,000. (Anim. Health Div.).

BENEFICIAL INSECTS

A BRACONID (Microctonus aethiops) - MARYLAND - Specimens recovered by dissection of Hypera postica (alfalfa weevil) by county: Washington (1) November 27, Montgomery (7) June, and Baltimore (13) June. Determinations by W.T. Hollaway. These are new county records. (U. Md., Ent. Dept.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - One adult female collected at golf course on Orcas Island during September. This is a new county record for San Juan County. Determined by W.J. Turner. (Goss).

GYPSY MOTH (Porthetria dispar) - About 1.94 million acres defoliated to some degree in 1971 in MAINE, NEW HAMPSHIRE, VERMONT, CONNECTICUT, MASSACHUSETTS, RHODE ISLAND, NEW YORK, NEW JERSEY, and PENNSYLVANIA. Most acres defoliated in Connecticut 655,107, Pennsylvania 598,200, and New York 479,150. (PPD).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Continues to attack late cotton in most north-central counties. (Turney). OKLAHOMA - Larvae found per 50 green cotton bolls by county: McClain 5; Garvin 3; Marshall 9; Love 23; Jefferson 27. Lint cleaner inspections positive in Cotton, Tillman, and Caddo Counties. (Okla. Coop. Sur.). NEW MEXICO - No larvae found in green cotton bolls in Quay, Curry, and Roosevelt Counties. (Mathews). CALIFORNIA - Recovered tenth moth of season on October 22. Total of 8 moths trapped in Tulare County. In Kern and Fresno Counties, 1 moth each to date. No larvae recovered in San Joaquin Valley this year. Total of 89,000,000 sterile moths released in Kern and Tulare Counties to date. (PPD).

A WHITEFRINGED BEETLE (Graphognathus leucoloma fecundus) - SOUTH CAROLINA - Specimens collected at Spartanburg, Spartanburg County, by W.B. Lott. This is a new county record. Determined by V.H. Owens, confirmed by R.E. Warner. (McCaskill).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Survey for release sites for parasites completed. About 22,400 properties surveyed and 103 suitable release sites selected. Parasite releases continued with about 1,000 released; total released 18,081 to date. Evidence of colonization noted on 12 properties. Eretmocerus paulistus (an eulophid wasp) apparently established; adults appearing at release sites. (Cal. Coop. Rpt.).

DETECTION

New State Records - A LACE BUG (Corythucha montivaga) - CALIFORNIA - Mono County. (p. 742). A MEGALOPYGUD MOTH (Norape ovina) - TENNESSEE - Knox County. (p. 742).

New County Records - AN APHID (Stegophylla quercina) MARYLAND - Wicomico (p. 742). EUROPEAN CORN BORER (Ostrinia nubilalis) ALABAMA - Clay (p. 730). EUROPEAN CRANE FLY (Tipula paludosa) WASHINGTON - San Juan (p. 743). NORTHERN CATTLE GRUB (Hypoderma bovis) ILLINOIS - Ogle, Schuyler, Madison, Perry, St. Clair, Williamson (p. 742). SOUTHWESTERN CORN BORER (Diatraea grandiosella) KENTUCKY - Edmondson, Simpson, Allen (p. 730). A WHITEFRINGED BEETLE (Graphognathus leucoloma fecundus) SOUTH CAROLINA - Spartanburg (p. 743).

HAWAII INSECT REPORT

Sorghum - CORN EARWORM (Heliothis zea) light on young sorghum heads in 250 acres; A PYRALID MOTH (Cryptoblabes aliena) heavy in mature seedheads in about 400 acres; CORN LEAF APHID (Rhopalosiphum maidis) heavy in 350 acres of 15-inch tall sorghum at Kilauea, Kauai. Parasitism by Lyoiphlebius testaceipes (a braconid) heavy; as much as 90 percent of R. maidis parasitized. (Sugawa).

General Vegetables - Adults of Greenhouse WHITEFLY (Trialeurodes vaporariorum) trace to light in 0.5 acre of bittermelon at Pupukea, Oaku; eggs and nymphs moderate. Larvae and adults of DIAMONDBACK MOTH (Plutella xylostella) moderate in 2 acres of head cabbage at Kula, Maui. Larvae affected 75 percent of plant leaves of recently harvested heads; about 2-6 larvae per leaf. (Ah Sam, Miyahira). A MEMBRACID BUG (Antianthe expansa) moderate in small backyard planting of red pepper at Nuuanu; as many as 29 nymphs and adults per 6-inch of stem. Negative on adjacent tomato planting. Moderate to heavy on same crop at Liliha, Oahu (adjacent to Nuuanu). These sites, about 11 miles from original point of host association in Waipahu and Ewa area, indicate may be fairly widespread. Damage by CHINESE ROSE BEETLE (Adoretus sinicus) and TOBACCO FLEA BEETLE (Epitrix hirtipennis) light to moderate to 90 percent of leaves in 0.4 acre planting of eggplant at Pupukea, Oahu. Adults of E. Hirtipennis light; average less than 1 per leaf. Larval mines of LEAF MINER FLIES (Liriomyza spp.) moderate to heavy in 0.5 acre of tomato at Pupukea, Oahu. Moderate to heavy mines on older leaves in 20+ acres of watermelon at Kahuku; adults heavy, as many as 25 per leaf; averaged 5. (Kawamura).

Fruits and Nuts - LARGE MANGO TIP BORER (Bombotelia jocosatrix) damage light to 100+ mango trees at Haiku, Maui; about 10 percent of young terminal leaves affected. (Miyahira). Parasitism of a SWALLOWTAIL BUTTERFLY (Papilio xuthus) eggs by Trichogramma sp. (a minute egg parasite) decreased. On Oahu, field collected eggs parasitized as follows: Six of 19 at Ewa (32 percent); 12 of 24 at Moanalua (50 percent) and 4 of 27 at Pauoa (15 percent). (Au et al.).

Weather of the week continued from page 738.

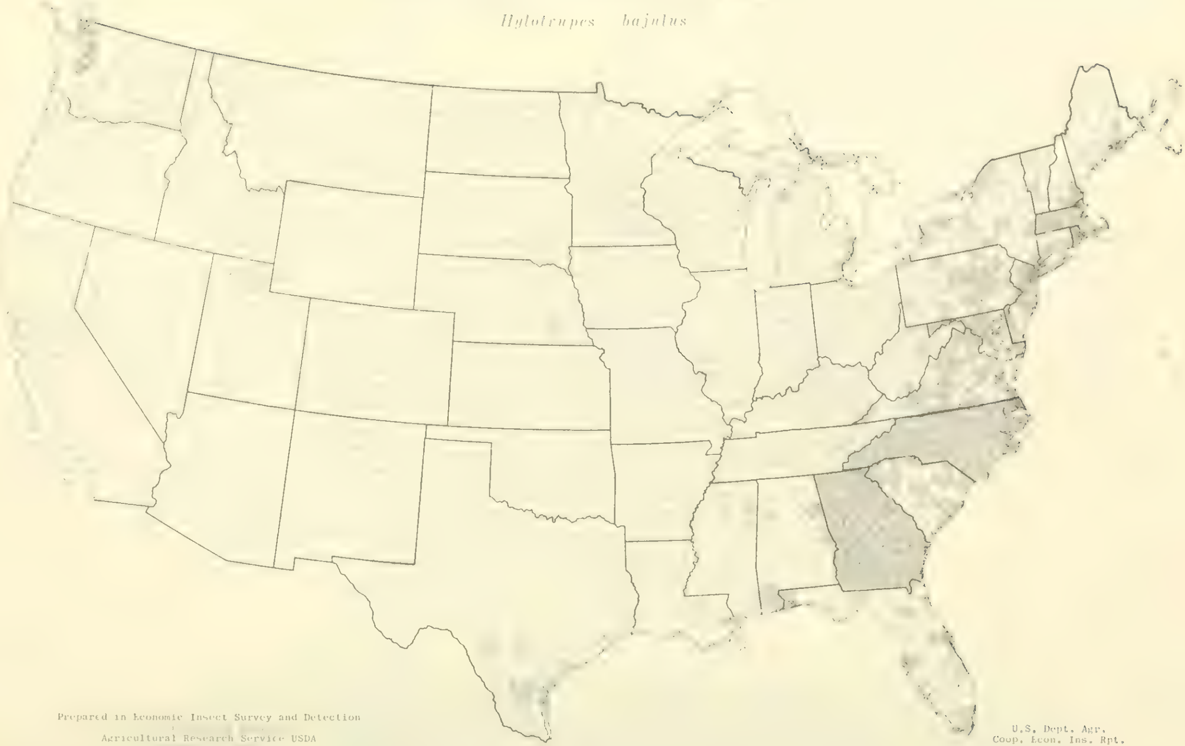
Thermal, California, and Phoenix, Arizona, registered 85° Thursday afternoon. The eastern third of the Nation continued unseasonally mild with minimum temperatures only slightly lower than normal maximums. Weekly average temperatures were below normal from the Pacific coast to the western edge of the Great Plains and above normal from the Great Plains to the Atlantic Ocean. Much of the area from Minnesota to New York and southward to Tennessee averaged 6° to 14° warmer than normal.

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation (inches)	Type of trap BL blacklight I incandescent MV mercury vapor O other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 10/15-21			BL	1				1		3									1	1	1	1		
KANSAS																								
Great Bend 10/1-13			BL	72		141	21			245								68	331			3		
Tribune 10/1,5,8,12			BL	18		165	11			144								41	56			2		
KENTUCKY																								
Bowling Green 10/17			BL	1						6						1								
10/20			BL	5						1									3			3	1	
MISSISSIPPI																								
Stoneville 10/15-21	55-86		BL	226	22			207	9	769								7	72	134	32	56	7	
NEW HAMPSHIRE																								
Lee 10/16			BL	4															10					
TEXAS																								
Waco 10/15-10/22			BL	22				112		473								88	237	85	261	31	5	
WISCONSIN																								
Lancaster 10/14-10/19			BL							12								6	5		2			
Hancock 10/13-10/18			BL	2															1					

Distribution of Oldhouse Borer

Hylotrupes bajulus



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ECONOMIC INSECT SURVEY AND DETECTION STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG damaged small grain in Texas, Kansas, and Nebraska. (p. 749).

FALL ARMYWORM damaged small grains in Illinois and Oklahoma. (p. 750).

CABBAGE LOOPER nuisance on vegetables in Tennessee, Oklahoma, and Arizona. (p. 751).

A SCARAB reduced the grade of sweetpotatoes in North Carolina. (p. 752).

PECAN WEEVIL damage is heavy in Alabama, Texas, and Oklahoma. (p. 752).

SMALLER EUROPEAN ELM BARK BEETLE adults and larvae collected for first time west of Cascades in Oregon. (p. 754).

CITRUS BLACKFLY surveys show extensions in Texas and Mexico. PINK BOLLWORM numbers heaviest in 4 years in Texas. (p. 755).

Detection

New State records include PYRALID MOTHS, an OECOPHORID MOTH, a TORTRICID MOTH, and a NOTODONTID MOTH from Alabama (pp. 752-754), JUNIPER SCALE from Wisconsin (p. 753), and a BROWN LACEWING from Pennsylvania. (p. 754).

For new county and Island records see page 757.

Special Reports

Estimated Losses and Production Cost Attributed to Insects and Related Arthropods - 1970. (pp. 759-772).

A New Trap for Capturing Boll Weevils. (pp. 773-774).

Reports in this issue are for weeks ending October 29 through November 19 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-NOVEMBER TO MID-DECEMBER 1971

The National Weather Service's 30-day outlook for mid-November to mid-December is for temperatures to average above seasonal normals over the eastern half of the Nation except for near normal in New England. Below normal temperatures are indicated from the Rockies to the west coast and over western portions of the northern Plains. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal from the Great Plains through the upper and middle Mississippi Valley to the Great Lakes and also over the south Pacific coast and portions of the central and southern plateau region. Subnormal totals are indicated along the eastern seaboard from the Carolinas to New England and in the interior of the Pacific Northwest. In unspecified areas near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subcribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Heavy, up to 200 per sweep in Kings County. Heaviest since 1965. Fall treatment ended; total of 164,299 acres of rangeland treated. (Cal. Coop. Rpt.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Moderate to heavy on Sudan grass windbreak around wheatfield in Jackson County. Occasional aphid noted in 2 wheatfields in Payne County. First report in wheat. (Okla. Coop. Sur.). NEW MEXICO - Ranged 25-75+ per square yard in barley near Roswell, Chaves County. (Mathews).

GREENBUG (Schizaphis graminum) - WASHINGTON - Light on wheat in Franklin County from Kahlotus to Pasco. (Klostermeyer). NEW MEXICO - Very light (0-1 per linear foot) in barley in Chaves County. Up to 4 per linear foot of wheat near Clovis, Curry County, and at Portales, Roosevelt County. Up to 3 per linear foot in wheatfields near Clayton, Union County. (Mathews). TEXAS - Damaged some small grains in Cottle and Motley Counties. Some controls applied. Light throughout most of Panhandle on small grains. Scattered reports of damage in Wilbarger and surrounding counties. Heavy in some Motley County fields. Some controls on wheat. (Boring et al.). OKLAHOMA - Averages per linear foot of wheat by county: Payne 10, Jackson 0.1, Custer 8, Major up to 5. (Okla. Coop. Sur.). KANSAS - Ranged 1,000-1,200 per row foot of wheat in portion of Lincoln County. Caused 25 percent stand loss in one field, about 1 percent winged form. Controls planned. Light in other areas of county. (Bell). NEBRASKA - Up to 500 per linear foot damaged wheat in Hamilton County. Damage less in rank growth. (Cranfill). MISSISSIPPI - Light on young wheat in Noxubee, Oktibbeha, Winston, Attala, and Monroe Counties. (Robinson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Averaged 40 per square foot in fall-planted alfalfa field in Payne County. Light (20-30 per 10 sweeps) in 2 established fields. (Okla. Coop. Sur.). ARIZONA - Controls applied to 200 acres of alfalfa in Yuma County early this reporting period. Counts of 500 per 100 sweeps of alfalfa noted at Yuma later in period. (Ariz. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

SORGHUM WEBWORM (Celama sorghiella) - MISSISSIPPI - Larvae 11 per head from 10-head sample of sorghum in Noxubee County. Still heavy on sorghum week ending November 5. (Robinson).

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH CAROLINA - Surveyed 171 cornfields in 32 counties; economic in 20 percent of these fields in 1971 and 1970. (Durant).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TENNESSEE - New county records: Wilson, Trousdale, Sumner, Macon, Smith, De Kalb, Cannon, Warren, Grundy, Marion, Van Buren, Coffee, and Franklin. Collected and determined by Pless and Gordon this period. (Gordon).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Adults found in De Witt, Macon, Menard, Christian, Morgan, Sangamon, and Shelby for new county records. (Ill. Ins. Rpt.).

SORGHUM MIDGE (Contarinia sorghicola) - NORTH CAROLINA - Damaged 50+ percent of sorghum in random checked fields in Stanley and Harnett Counties. Destroyed 50-acre field in Stanley County. (Hunt).

SMALL GRAINS

FALL ARMYWORM (Spodoptera frugiperda) - ILLINOIS - Heavy; damaged 30 of 36 acres of wheat in St. Clair County. (Ill. Ins. Rpt.). OKLAHOMA - Larvae 25 per linear foot of wheat in Blackwell area, Kay County. Destroyed 50-acre field. Averaged 0.5 per linear foot in Eldorado area, Jackson County. Light to moderate infestations in Payne, Kingfisher, Garvin, and Cotton Counties. Still heavy in early November on small grains in Oklahoma County. Declined in Coal and Murray Counties. Destroyed 20-acre field of small grain in Johnston County. (Okla. Coop. Sur.). TEXAS - Continues to cause moderate damage to small grains in Archer, Cottle, Foard, and Jones Counties. Decreased in Motley County. (Boring).

PALE WESTERN CUTWORM (Agrotis orthogonia) - NEBRASKA - Populations declined in 1971. Catches at light traps in southwest and panhandle districts in September and October light, indicating light oviposition. Only light scattered infestations predicted for Kimball, Banner, Morrill, Dundy, and Chase Counties in 1972. (Pruess).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Damaged newly planted small grains in some Wilbarger County fields. (Boring).

HESSIAN FLY (Mayetiola destructor) - ILLINOIS - Infested 50 percent of seedlings in 3 early planted wheatfields in Effingham County; killed 25 percent of plants. Two fields replanted. All fields planted about 2 weeks prior to suggested planting date of October 5-8. Clay County damage noticeable. (Ill. Ins. Rpt.).

WHITE GRUBS (Phyllophaga spp.) - MICHIGAN - Damaged fall-sown wheat in Shiawassee County. Young plants clipped below soil surface and generally chlorotic and dying in several fields. Grubs found down to 8 inches deep in soil. Worst white grub injury noted. (Sauer). KANSAS - Damage severe in Hamilton County wheatfield; damage moderate in Cowley County field. (Bell).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - First of season. Up to 10 per linear foot in 2 wheatfields in Payne County. Light to moderate on wheat in Kingfisher County. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

A SATURNIID MOTH (Hemileuca tricolor) - ARIZONA - Larvae heavy on range plants in portion of Cochise County. Not delimited due to rugged terrain. Feeding on white thorn acacia and mesquite. (Ariz. Coop. Sur.).

SOUTHERN CHINCH BUG (Blissus insularis) - CALIFORNIA - Adults on Bermuda and St. Augustine grass in Riverside, Riverside County. This is a new county record. Collected by A. Deal on October 5. Determined by G. Buxton. (Cal. Coop. Rpt.).

SOUTHERN FIRE ANT (Solenopsis xyloni) - TEXAS - Activity increased throughout central area. Heavy on pastureland in some areas of Brazos and McCulloch County; also detected at Waco, McLennan County. (Green et al.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Adults averaged about 6 per 10 sweeps in uncut alfalfa in western Dane, southern Sauk, and northeastern Iowa Counties. Ranged 8-10 per 10 sweeps in heavier soils north of Madison County. Declined from previous period due to cooler temperatures. Larval counts remained fairly consistent but light. (Wis. Ins. Sur.). VIRGINIA - Adults and larvae light on alfalfa in Lunenburg, Charlotte, Hanover, New Kent, Dinwiddie, Prince George, Powhatan, and Louisa Counties. (Innes, Tate). OKLAHOMA - Adults light on alfalfa in Payne County. Averaged 2 per 100 sweeps in one field and less than 1 per square yard in another. Adults averaged 70 per 25 sweeps of alfalfa in Stephens County; larvae 10 per 25 sweeps. (Okla. Coop. Sur.). TEXAS - Adults and larvae light on alfalfa in Burleson County; adults light in Wharton County. (Latham et al.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Larvae per 100 sweeps of alfalfa by county: Yuma 200 and Maricopa 8. (Ariz. Coop. Sur.). NEW MEXICO - First and second instar larvae up to 3 per 25 sweeps of alfalfa in Farmington area, San Juan County. (Heninger). Ranged 4-10 per 25 sweeps in Roswell area, Chaves County, and 10-18 in Carlsbad area, Eddy County. (Mathews).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Killed newly seeded alfalfa stands in Wilbarger County. (Boring).

PEA APHID (Acyrthosiphon pisum) - WISCONSIN - Declined about 50 percent this period. Sexuals continue to increase; 36 percent oviparous forms compared to 11 percent previous period. Parasitism and males still about 10 percent. (Wis. Ins. Sur.). NEW MEXICO - Moderate to heavy, ranged 2-10 per square foot, on alfalfa in Roswell area, Chaves County. (Mathews).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Counts per 100 sweeps of alfalfa in Yuma County: Parker 135 and Yuma 900 early this period. Counts by county: Yuma 165 and Maricopa 182 as of November 5. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Adults and nymphs ranged 6-8 per 25 sweeps on Chaves County alfalfa. (Mathews). Ranged 1-8 on alfalfa in Farmington area, San Juan County. (Heninger).

SOYBEANS

A CERAMBYCID BEETLE (Dectes texanus texanus) - NORTH CAROLINA - Larvae girdled stems in southern Washington County and northwest Hyde County. Infestations 30+ percent in 5 fields. (Ogle et al.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Heavy in cotton throughout Rolling Plains. Infestations in many fields ranged 2,000-16,000 per acre early this period. (Boring). MISSISSIPPI - Continues heavy in some fields in some southern counties. Frost not heavy enough to kill foliage. (Robinson).

BOLLWORM (Heliothis zea) - NEW MEXICO - Infestations scattered in cotton in Artesia area, Eddy County. Damaged up to 4 percent of green bolls. (Mathews).

BANDEDWING WHITEFLY (Trialeurodes abutilonea) - ALABAMA - Specimens collected on cotton in Elmore, Autauga, Montgomery, and Macon are new county records. Determined by L.M. Russell. (McQueen).

SUGAR BEETS

FALSE CELERY LEAFTIER (Udea profundalis) - CALIFORNIA - Larvae of this species and Spodoptera exigua (beet armyworm) 3 per sweep of sugar beets at West Sacramento, and 6 per sweep at Woodland, Yolo County. (Cal. Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - First and second instar larvae heavy on 6-inch-tall sugar beets in 80-acre field at Tolleson, Maricopa County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

NOCTUID MOTHS - TENNESSEE - Mixed larval populations of BEET ARMYWORM (Spodoptera exigua), CORN EARWORM (Heliothis zea), and CABBAGE LOOPER (Trichoplusia ni) moderate on commercial spinach in Dyer County. Controls as of November 5 not effective and spinach rejected at processing plant due to presence of larvae. (Johnson). OKLAHOMA - T. ni heavy in 200 acres of spinach and turnips in east-central area. Fields treated once but control not adequate and will be treated again. (Okla. Coop. Sur.). ARIZONA - T. ni moderate to heavy on cabbage, cauliflower, and lettuce at Yuma, Yuma County. Controls applied. (Ariz.Coop.Sur.).

IMPORTED CABBAGEWORM (*Pieris rapae*) - CALIFORNIA - Larvae damaged cabbage at Crescent City, Del Norte County. (Cal. Coop. Rpt.).

SALTMARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Larvae migrated into lettuce period ending November 12. Foil barriers erected around fields. (Ariz. Coop. Sur.).

SWEETPOTATO HORNWORM (*Agrius cingulatus*) - MARYLAND - Single specimen taken at Laurel, Prince Georges County, on October 19. Collected and determined by T.L. Bissell. This is a new county record. (U. Md., Ent. Dept.).

A SCARAB (*Strigoderma arboricola*) - NORTH CAROLINA - Larvae damaged sweetpotatoes in isolated Johnston and Wilson County fields. Surface damage on all potatoes in 5-acre Wilson County field; potatoes reduced from grade 1 to cannery potatoes. (Hunt).

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - Ranged 1-4 per row yard in 400 acres of spinach near Vienna, Dorchester County. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

A TORTRICID MOTH (*Acleris minuta*) - ALABAMA - Larvae heavy and damaging foliage of young apple trees at nursery in Cullman County on September 16, 1971. Collected by C.A. Kouskolekas. Determined by D.M. Weisman. This is a new State record. (McQueen).

CODLING MOTH (*Laspeyresia pomonella*) - CALIFORNIA - Infesting apple fruit in Castro Valley, Alameda County. This species and *Paramyelois transitella* (navel orangeworm) heavy on walnuts at Visalia, Tulare County. (Cal. Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Last generation of larvae in many pecan shucks on and under several hundred unsprayed trees in Lee and Elmore Counties. Larvae 1 per 10 nuts in many trees. Numbers usually fewer on seedlings. (Linder et al.).

PECAN WEEVIL (*Curculio caryae*) - ALABAMA - Larval damage heavy to nuts in several pecan orchards in Dale County. (Estes). TEXAS - Heavy damage to pecans in Haskell County. (Boring). OKLAHOMA - Larvae infested 40 percent of untreated pecan nuts in orchard in Rogers County. (Okla. Coop. Sur.).

ITALIAN PEAR SCALE (*Epidiaspis leperii*) - CALIFORNIA - Adults heavy on walnut trees in Gridley and general on walnuts in Biggs, Butte County. (Cal. Coop. Rpt.).

CITRUS

CITRUS RED MITE (*Panonychus citri*) - ARIZONA - Up to 5 per citrus leaf at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS RUST MITE (*Phyllocoptruta oleivora*) - FLORIDA - Adults infested 30 percent of 150 satsuma (*Citrus nobilis*) plants in nursery at Riverview, Hillsborough County. (Simmons).

COTTONY CUSHION SCALE (*Icerya purchasi*) - ARIZONA - This species controlled in 60 acres of lemons by vedalia (*Rodolia cardinalis*) on Yuma Mesa. Heavy infestations in residential areas of Yuma County; predators absent. (Ariz. Coop. Sur.).

BROWN SOFT SCALE (*Coccus hesperidum*) - ARIZONA - Mostly on residential citrus and at small grove near Yuma City, Yuma County. (Ariz. Coop. Sur.).

NAVEL ORANGEWORM (*Paramyelois transitella*) - CALIFORNIA - Larvae 3 per citrus fruit locally at La Mesa, San Diego County. (Cal. Coop. Rpt.).

ORNAMENTALS

JUNIPER SCALE (Carulaspis juniperi) - WISCONSIN - Specimens collected from juniper at Madison, Dane County, by W.E. Simons on June 29, 1971. Determined by D.R. Miller. This is a new State record. (Wis. Ins. Sur.).

A LACE BUG (Stephanitis takeyai) - PENNSYLVANIA - Adults heavy on Pieris sp. at Schuylkill Haven, Schuylkill County. Collected by Wolf on October 21. Determined by E.E. Simons. Adults on Pieris japonica at Apollo, Armstrong County. These are new county records. (Henry, Garret). Adults collected on P. japonica near Sewickley, Beaver County, by L. Garret November 1. Determined by E.E. Simons. This is a new county record. (Kim).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - KENTUCKY - Nuisance in greenhouses in Jefferson and Franklin Counties and on orchids at commercial orchid producer in Fayette County. (Barnett).

HOLLYHOCK WEEVIL (Apion longirostre) - VIRGINIA - Adults collected from home in Shenandoah County, by R. Manning and J.D. Cutlip November 16. Determined by W.A. Allen. This is a new county record. (Allen).

AZALEA LEAFMINER (Gracillaria azaleella) - NEW HAMPSHIRE - Heavy on potted plant in greenhouse at Concord, Merrimack County. Adults reared from material collected by C. Williams, October 25, 1971. Determined by W.J. Morse. (Blickle).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Surveys indicate populations heavy in 73,000 acres in Nantahala National Forest, Cherokee County, during September. (Hunt).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - SOUTH CAROLINA - Outbreak that started in 1970 on Sand Hills State Forest and Cheraw State Park declined. Parasites, predators, and salvage operations primary factors in decline. (Remion).

LODGEPOLE NEEDLEMINER (Coleotechnites milleri) - CALIFORNIA - Infestation in Waugh Lake in the Rush Creek area of Inyo National Forest. Involved 400 acres of lodgepole pines; damaged about 700 pines. (Smith, USFS).

A CONIFER SAWFLY (Neodiprion fulviceps) - OREGON - Adults emerged in lab in early October from larvae collected in nursery at Portland, Multonomah County, May 19, from needles of Scotch pine (Pinus sylvestris). Determined by D.R. Smith. First record noted from this host. (Larson).

A CECIDOMYIID MIDGE (Cecidomyia piniinopis) - CALIFORNIA - Much damage to ponderosa pines in 10-acre stand in Sierra National Forest in Fresno County. Outbreaks widespread in State past 2 years. Some damage to plantations in Mt. Shasta area, Siskiyou County. (Rutty, USFS).

A PYRALID MOTH (Tetralopha militella) - ALABAMA - Larvae ranged 1-5 per sycamore leaf; folding, webbing, and skeletonizing about 80 percent of leaves at Auburn, Lee County, on September 27, 1971. Collected by L. Wade. Determined by D.M. Weisman. This is a new State record. (McQueen).

A PYRALID MOTH (Tetralopha asperatella) - ALABAMA - Larvae damaged leaves of red oak at Dothan, Houston County, on September 24, 1971. Collected by W.H. Stephenson. Determined by D.M. Weisman. This is a new State record. (McQueen).

AN OECOPHORID MOTH (Psilocorsis faginella) - ALABAMA - Larvae damaged leaves of red oak at Dothan, Houston County, on September 24, 1971. Collected by W.H. Stephenson. Determined by D.M. Weisman. This is a new State record. (McQueen).

A NOTODONTID MOTH (*Datana contracta*) - ALABAMA - Larvae feeding on post oak at Auburn, Lee County, on September 27, 1971. Collected by L. Wade. Determined by D.M. Weisman. This is a new State record. (McQueen).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - OREGON - Adults and larvae collected from trap elm logs at Hood River County, at Medford, Jackson County, and at Grants Pass, Josephine County. These are new county records. (Goeden). Medford and Grants Pass collections represent first occurrences west of Cascades. Counties from which collections made include Wasco, Umatilla, Malheur, Klamath, and Lake. (Penrose).

A WEEVIL (*Sciaphilus asperatus*) - WISCONSIN - Invaded home at Park Falls, Price County, period ending October 29. This is a new county record. (Wis. Ins. Sur.).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 49 cases reported in U.S. October 24 to November 19 in TEXAS. Remainder of report is for October 24 to November 13. Total of 1,130 laboratory-confirmed cases reported in Barrier Zone in Republic of Mexico as follows: Sonora 77, Chihuahua 542, Coahuila 181, Nuevo Leon 84, Tamaulipas 246. Total of 247 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Arizona 616,000; New Mexico 210,000; Texas 126,194,000; Arkansas 4,710,000; Mexico 274,000,000. (Anim. Health).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Continues heavy on cattle in Cotton County; light to moderate in Cleveland and Garvin Counties. Averaged 400 per head on steers in Payne County. (Okla. Coop. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - TEXAS - Heavy on cattle in Fayette County. (Cole).

HOG LOUSE (*Haematopinus suis*) - MISSISSIPPI - Heavy on swine in Oktibbeha County. Controls applied. (Robinson).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - MISSISSIPPI - Early infestation on poultry in Jones County. Control applied. (Robinson).

EAR TICK (*Otobius megnini*) - OKLAHOMA - Moderate to heavy in ears in several cattle herds in Roger Mills County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

GERMAN COCKROACH (*Blattella germanica*) - OREGON - Infested residence at Salem, Marion County. This is a new county record. (Penrose).

BENEFICIAL INSECTS

A BROWN LACEWING (*Kimminsia schwarzi*) - PENNSYLVANIA - One adult specimen swept from Austrian pine near Indiana, Indiana County, by Henry and Garret September 3, 1971. Determined by O.S. Flint. This is a new State record. (Kim).

A WEEVIL (*Phrydiuchus tau*) - OREGON - Released 175 adults on Mediterranean sage (*Salvia aethiopis*) in Lakeview area, Lake County. (Goeden).

HONEY BEE (*Apis mellifera*) - WEST VIRGINIA - Total of 553 colonies inspected during October. Twelve colonies dead and two diseased with American foulbrood. (W. Va. Ins. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (Aleurocanthus woglumi) - Surveys indicate extensions in Brownsville, TEXAS and Matamoros, MEXICO. All new infestations in Brownsville light and scattered. Surveys continue. Controls in progress. (PP).

EUROPEAN CRANE FLY (Tipula paludosa) - WASHINGTON - Numerous larvae collected from lawns at Blaine, Whatcom County, week of November 1-5. Heavy rains apparently caused larvae to surface. (Rosander).

GIANT AFRICAN SNAIL (Achatina fulica) - FLORIDA - Eggs collected from 4 different lawns in northwest area of Miami, Dade County. (DeHaven, Lawton, Oct. 18).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - GEORGIA - Light on farm at Whitesburg, Carroll County. Collected by K.R. Parkinson November 1. TEXAS - Heavy in plowed cornfield at Chappell Hill, Washington County. Collected by B.B. Smith November 4. Both county records determined by V.H. Owens; confirmed by D.R. Smith. (PP).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Lint cleaner larval counts per bale in Yuma County cotton gins: Roll 11, Horn 50, Blaisdel 0, Parker Valley 4-40, Texas-Hill 30, Yuma 2-9, Somerton 9, and Gila Valley 1. At San Simon 21+ per bale in Cochise County. Larvae 12.5 per 100 bolls checked in Mohave Valley area of Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Populations increased in cotton in Artesia area, Eddy County. Green boll infestations ranged 8-20 percent. (Mathews). Several fields near Sunland Park, Dona Ana County, had heavy infestations in green bolls. Two fields with 90+ percent of green bolls infested and many had 2+ larvae per boll October 29. (Campbell). No larvae in green bolls in 6 fields in Roswell area, Chaves County. (Mathews). TEXAS - Detected in one field in Wichita County during period ending October 29. (Boring). Larvae moderate to heavy in bolls in most Trans-Pecos area counties. Larvae ranged 2-5 per boll in many fields. Found in unopened bolls in Midland, Martin, Glasscock, Reagan, and Ward Counties and certain areas of Pecos County. Populations in cotton heavier than since fall of 1967. Most larval infestations in this area ranged 5,000 to 30,000 per acre. (Neeb). Light to heavy in Fort Bend, Wharton, and Brazoria Counties. (Poindexter). OKLAHOMA - Percent green bolls infested by county: Caddo 7; McClain 10; McIntosh 20; Greer 10; Harmon 5; Jackson 1; Bryan 35; Garvin 10; Jefferson 54; Marshall 40; Love 46; and Coal 30. Positive lint cleaner inspections from 2 new counties, Coal and McIntosh, but inspections in Jackson and Harmon Counties negative. (Okla. Coop. Sur.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - TEXAS - Heavy and localized near Rosenberg, Fort Bend County, mid-November. Adults 8-10 per plant. Tubers severely perforated and larvae numerous. (Poindexter).

TULIPTREE SCALE (Toumeyella liriodendri) - CALIFORNIA - Found on yellowpoplar and deciduous magnolia; infested 14 properties so far at Sonoma, Sonoma County. Following week's surveys show adults heavy. Known infestation extended a mile north and west of the Sonoma infestation to Boyes Hot Springs, Sonoma County. This infestation is on yellowpoplars and appears to have been active for several years. Delimiting survey will continue. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

Corn - CORN EARWORM (*Heliothis zea*) larvae light, infested 20 percent of mature ears, in 3 acres of field corn at Kaaawa, Oahu. Nymphs and adults of CORN PLANTHOPPER (*Peregrinus maidis*) moderate to heavy in 3 acres of corn at Kaawa. Nymphs and adults of *Cyrtorhinus lividipennis* (a predacious mirid bug) trace amid *P. maidis*. (Kawamura).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) negligible in most commercial snap bean plantings throughout Oahu. (Matayoshi, Kawamura). CHINESE ROSE BEETLE (*Adoretus sinicus*) damage light to moderate in 0.5 acre planting of ginger (*Zingiber officinale*) at Kahaluu, Oahu. BEET ARMYWORM (*Spodoptera exigua*) larvae generally trace to light in 5,000 square feet of soybeans at Waimanalo, Oahu; heavy on some leaves. (Sugawa). Larvae of TOMATO PINWORM (*Keiferia lycopersicella*) and POTATO TUBERWORM (*Phthorimaea operculella*) infested about 40 percent of leaves in 5,000 square feet of eggplant at Pearl City, Oahu. Infestation severe 60 days previously with much production loss. Larvae heavy and damaged 0.75 acre of tomato at Omaopio, Maui. (Hori, Kawamura).

Forest and Shade Trees - Larvae of a NOCTUID MOTH (*Melipotis indomita*) several hundred per tree at base of 10 kiawe (*Prosopis pallida*) trees at Punahou, Honolulu, Oahu. Light trap collections for October show decline. (Rose). CUBAN LAUREL THRIPS (*Gynaikothrips ficorum*) nymphs and adults lightly infested 5 percent of young terminal leaves on 30+ trees of Chinese banyan (*Ficus retusa*) trees at Punchbowl, Oahu; nymphs and adults of *Montandoniola moraguesi* (an anthocorid bug) light also. Ratio of thrips to predator, 5:1. (Kawamura).

Fruits and Nuts - Four adults of a LEAFHOPPER (*Protalebrella brasiliensis*) taken in planting of wedelia at Kona, Hawaii; 23 taken from same host at Lihue, Kauai, in April 1971. These are new island records. (Kawamura).

Man and Animals - Trapped 94 VEXANS MOSQUITO (*Aedes vexans nocturnus*) and 894 SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) in 55 light traps on Oahu during October. *Aedes* per trap ranged 0-20 at Kahaluu. *Culex* per trap ranged 0-894 at Waipahu. (Mosq. Cont. Br., Dept. of Health). One adult of a MUSCID FLY (*Musca sorbens*) taken at large at Hanapepe, Kauai, during August for a new island record. (Howarth).

Beneficial Insects - LANTANA LEAF BEETLE (*Octotoma scabripennis*) heavy in wasteland lantana at Kona; as many as 5 mines in as much as 70-80 percent of leaves. (Matayoshi). Light emergence of a EULOPHID WASP (*Aneristus ceroplastae*) and an ENCYRTID WASP (*Aphycus mexicanus*) from passionfruit vines heavily infested with *Ceroplastes cirripediformis* (barnacle scale) collected at Kahului, Maui, in early October. (Kawamura). An ICHNEUMON WASP (*Diadegma insularis*) parasitized larvae and pupae of DIAMONDBACK MOTH (*Plutella xylostella*) on Hawaii. *D. insularis* introduced from Kenya in 1953 to control *P. xylostella*. (Matayoshi). The BRACONIDS (*Opius phaseoli* and *O. importatus*) and a PTEROMALID WASP (*Halticoptera patellana*) completely parasitized *Melanagromyza phaseoli* (bean fly) in cowpeas and snap beans collected from six field locales on Kauai. On Maui, infested yardlongbean material collected at Waikapu 100 percent parasitized. (Sugawa, Miyahira). A TACHINA FLY (*Eucelatoria armigera*) and an ICHNEUMON WASP (*Casinaria infesta*), 23 percent each, parasitized *Herpetogramma licarsisalis* (grass webworm) larvae collected from lightly infested pangola grass pasture at Hanalei, Kauai, in late September.

Miscellaneous Pests - Collected 245 dead or dying specimens of GIANT AFRICAN SNAIL (*Achatina fulica*) during October at Poipu, Kauai. Negative at Wahiawa. Poison bait applications continue. On Hawaii, no live snails detected during October. (Sugawa, Yoskioka). Collected 36+ adults of a CADDISFLY (*Cheumatopsyche analis*) in light trap at Hilo, Hawaii, for a new island record. *C. analis* previously reported only from Oahu and Molokai Islands. (Shiroma).

DETECTION

New State Records - A BROWN LACEWING (Kimminsia schwarzi) PENNSYLVANIA - Indiana County (p. 754). JUNIPER SCALE (Carulaspis juniperi) WISCONSIN - Dane County (p. 753). A NOTODONTID MOTH (Datana contracta) ALABAMA - Lee County (p. 754). AN OECOPHORID MOTH (Psilocorsis faginella) ALABAMA - Houston County (p. 753). PYRALID MOTHS (Tetralopha spp.) ALABAMA - T. asperatella in Houston County, T. militella in Lee County (p. 753). A TORTRICID MOTH (Acleris minuta) ALABAMA - Cullman County (p. 752).

New County and Island Records - BANDEDWING WHITEFLY (Trialeurodes abutilonea) ALABAMA - Autauga, Elmore, Macon, Montgomery (p. 751). A CADDISFLY (Cheumatopsyche analis) HAWAII - Hawaii (p. 756). GERMAN COCKROACH (Blattella germanica) OREGON - Marion (p. 754). HOLLYHOCK WEEVIL (Apion longirostre) VIRGINIA - Shenandoah (p. 753). IMPORTED FIRE ANT (Solenopsis saevissima richteri) GEORGIA - Carroll; TEXAS - Washington (p. 755). A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Armstrong, Beaver, Schuylkill (p. 753). A LEAFHOPPER (Protalebrella brasiliensis) HAWAII - Hawaii, Kauai (p. 756). A MUSCID FLY (Musca sorbens) HAWAII - Kauai (p. 756). SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) OREGON - Hood River, Jackson, Josephine (p. 754). SOUTHERN CHINCH BUG (Blissus insularis) CALIFORNIA - Riverside (p. 750). SOUTHWESTERN CORN BORER (Diatraea grandiosella) TENNESSEE - Cannon, Coffee, De Kalb, Franklin, Grundy, Macon, Marion, Smith, Sumner, Trousdale, Van Buren, Warren, Wilson (p. 749). SWEETPOTATO HORNWORM (Agrius cingulatus) MARYLAND - Prince Georges (p. 752). A WEEVIL (Sciaphilus asperatus) WISCONSIN - Price (p. 754). WESTERN CORN ROOTWORM (Diabrotica virgifera) ILLINOIS - Christian, De Witt, Macon, Menard, Morgan, Sangamon, Shelby (p. 749).

CORRECTIONS

CEIR 21(36):632 - Delete COTTON LEAFWORM (Alabama argillacea) note. Larvae misidentified. (Okla. Coop. Sur.).

LIGHT TRAP COLLECTIONS

	Tempera	/Precip-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FLORIDA															
Gainesville 10/22-28			BL	2			4				3		2	2	
10/29-11/4			BL	1			3		1		5		1	1	
11/5-11			BL						1		6				
11/12-19			BL				2		3		11			3	
KENTUCKY															
Bowling Green 10/27			BL	1							1				
11/3			BL	1							2			2	
MISSISSIPPI															
Stoneville 10/22-28	0.08	[illegible]2-8[illegible]	2BL	65	1		139	2	102	6	56	115	27	20	2
10/29-11/4	Trace	[illegible]7-87	2BL	63	16		60		24	1	23	45	13	16	
11/5-11	0.15	25-74	2BL	16			12				12	32	13		
11/12-18	Trace	43-80	2BL	271			54		6	3	85	760	492	56	
MISSOURI (County)															
Platte 10/14-20			BL	3		3			36	20	19		51	6	
10/21-27			BL	2					16	4	3		44	2	
NEW HAMPSHIRE															
Lee 10 27			BL	15					1		54				
TEXAS															
Waco 10/22-28			BL	16			102			47	239	75	155	18	6
10/28-11/4			BL	14			233		33	128	943	62	104	10	10
11/5-11			BL	16			142			107	402	7	18	1	2
11/12-18			BL	8			108		12	73	413	42	30	12	

COOPERATIVE ECONOMIC INSECT REPORT

ESTIMATED LOSSES AND PRODUCTION COST ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS - 1970

Introduction

Prior to 1966, insect loss estimates were published in the Cooperative Economic Insect Report as individual reports. An attempt has been made for the sixth year to condense loss estimates from various States into a single report. This gives a more meaningful and better overall picture of the crop losses. The data have been compiled from the crop loss estimates submitted from 15 States. The entomologists submitting the 1970 estimates are listed below.

H.F. McQueen	Alabama
W.P. Boyer	Arkansas
W.B. Tappan	Florida
K.F. Kawamura	Hawaii
K.O. Bell	Kansas
J.L. Hellman	Maryland
R.G. Flaskerd	Minnesota
D.L. Keith	Nebraska
W.J. Brandvik	North Dakota
D.C. Arnold	Oklahoma
P.A. Jones	South Dakota
C.D. Gordon	Tennessee
L.R. Green	Texas
W.A. Allen	Virginia
A.E. Parshall	Wyoming

Legend for pest abbreviations appears at end of loss tables.

Separates of this report are available from the Economic Insect Survey and Detection Staff.

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
21(45-48):759-772, 1971

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
CORN (Grain)										
Alabama	SwCB, CLA, CEW, FA, ECB, Ww, SCR, SuB, LCB, MB, StB, SCSB, CB		Bu.							
		545.00	2.30	3.63	510.00	-	1.50	35.00	52.50	1,903.80
Kansas	Larvae CR	1,285.00	9.92*	12.90*	625.00	1,037.40#	2.50	650.00	1,625.00	2,662.40#
	Adults CR	"	-	-	-	-	2.50	182.00	455.00	-
	CEW	"	1.24	1.61	145.00	233.71	2.90	80.00	232.00	465.71
	ECB	"	1.25	162.50	664.00	1,079.00	3.00	40.00	120.00	1,199.00
	SpM	"	-	-	-	-	3.00	68.00	204.00	-
	WBC	"	-	-	8.00	-	1.30	16.00	68.00	-
	CLA	"	-	-	-	-	2.20	10.00	22.00	-
Maryland	Aw, CEw, CRw, ECB, FAw, Sw, DSB	484.00	8.30	12.28	42.00	515.93	5.00	8.00	40.00	555.93
Minnesota	ECB	4,594.00	-	-	-	28,627.58	2.63	28.00	73.64	28,627.58
	CR, Cws, Ww	-	9.00	12.12	11,340.00	14,084.28	2.66	1,116.00	2,968.56	17,052.84
Nebraska	CR, ECB, CEW	1,897.00	11.25	14.29	-	**	3.50	3,300.00	11,550.00	77,750.00
North Dakota	Gh, ECB, Wa, CLA, CR	130.00	3.50	4.03	10.00	40.30	2.25	20.00	45.00	85.30
South Dakota	ECB, CR, Gh, Ww, CWs	3,425.00	10.25	12.92	753.50	9,735.22	6.00	1,130.25	6,781.50	16,516.72
Tennessee	CEW	569.00	0.40	0.61	150.00	91.50	4.00	100.00	400.00	491.50
Virginia	Aw, Cws, CEW, CR, JB	478.00	13.60	20.13	25.00	503.25	2.50	90.00	225.00	828.25
Wyoming	WCR, BGM, Ww	27.00	3.72	5.06	22.50	11.38	3.25	2.10	6.82	18.21
					Subtotal	55,959.58			24,869.02	148,157.27

* Loss on acreage not treated that should have been.

# Loss, combined for treated and non-treated.

** Increase in losses due to heavier European corn borer populations.

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
CORN (Silage)										
North Dakota	Gh, ECB, Ww, CLA, CR	335.00	Tons 0.40	2.80	10.00	28.00	2.25	15.00	33.75	61.75
Wyoming	WCR, BGM, Ww	34.00	0.52	4.30	3.35	14.40	3.25	3.15	10.24	24.64
SWEET CORN					Subtotal	42.40			43.99	86.39
Alabama	CEW, FA, Ww, SCR, CLA, StB	2.80	Cwt. -	-	-	-	30.00	2.80	84.00	84.00
Hawaii	CEW, M, CP	0.03	Lbs. 498.00	64.00	-	21.12	72.00	0.03	23.76	44.89
Minnesota	ECB, CEW, Cws	105.90	-	-	-	-	9.50	90.81	862.68	862.68
POPCORN					Subtotal	21.12			970.44	991.57
Nebraska	CR, ECB, CEW, SCB, Cws, M, Gh, CLA, Ww, FA, WBC, SCM, SB, Aw	19.00	325.30	87.83	5.00	439.15	2.85	12.00	34.20	473.35
SORGHUM (Grain)					Subtotal	439.15			34.20	473.35
Arkansas	SM, SWw, CEW	190.00	Lbs. 1,890.00	37.42	5.70	213.29	2.00	4.30	8.60	221.89
Kansas	Gb CLA	3,560.00	Bu. 16.00	17.44	-	1,744.00	2.10 2.10	400.00 70.00	840.00 147.00	2,584.00
Nebraska	CLA, Cws, Gh, Ww, PB, RA, CB, SCM, SCB, Gb	1,499.00	10.20	10.81	160.00	1,729.60	2.75	210.00	577.50	2,307.10
Oklahoma	Gb, CEW, FA, SM	542.00	10.30	11.64	154.58	1,799.29	2.21	94.74	209.38	2,008.67
South Dakota	Gb, Cws, Ww	282.00	8.50	7.82	109.98	860.04	2.75	101.52	279.18	1,139.22
Texas	CB, CEW, ScBo, SM SWw, CB, SwCB, SCR	5,886.00	5.60	6.33	-	3,725.84	5.82	1,765.40	10,274.62	16,599.56
					Subtotal	10,072.06			12,336.23	24,860.41

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Control Cost Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	Total Loss ($1000)
SUGARCANE			Tons							
Hawaii	NGSW	113.80	0.36	57.66	-	605.00*	-	-		605.00
					Subtotal	605.00				605.00
BARLEY			Bu.							
North Dakota	T, A, Ww, Gh, AL, Aw	1,963.00	2.80	2.35	10.00	23.50	2.25	30.00	67.50	91.00
Wyoming	A, PWC	126.00	1.18	1.05	1.90	2.00	2.50	0.03	.07	2.71
OATS					Subtotal	25.50			67.57	93.71
Nebraska	Ww, EGA, WG, CB, L, Aw, Cws, Gh	578.00	2.52	1.59	25.00	39.75	2.70	5.00	13.50	53.25
North Dakota	Gh, Ww, A, Aws	2,687.00	3.90	2.07	10.00	20.70	2.25	10.00	22.50	43.20
South Dakota	Gh	2,569.00	3.70	2.33	-	239.43	2.75	-	-	239.43
Wyoming	A, Cws	95.00	1.44	0.92	0.09	0.09	2.50	0.05	12.50	21.06
WHEAT					Subtotal	299.97			48.50	356.94
Kansas	HF Gh Gb	8,963.00** 9,061.00 -	0.34 1.32 1.98	0.44 1.69 2.53	- 43.00 3.22	1,003.46 72.65 8.16	- 2.00 2.50	- 50.00 1.17	- 10.00 2.94	1,003.46 82.65 11.10
Nebraska	BWM, WG, WSM, Cws, HF, Gb, Gh, Ww, EGA, CB, Aw, WCM	2,588.00	5.32	6.54	55.00	359.70	2.75	95.00	261.25	-
North Dakota	WSSF, Ww, Gh, A, AL, Aw	6,486.00	1.40	2.16	250.00	540.00	2.25	250.00	562.50	1,102.50
Oklahoma	Gb, FA, M	3,777.00	6.00	7.86	764.84	6,011.66	2.12	179.41	380.34	6,392.00
South Dakota	Cws, WSM, Aw, HF, Gh, M	1,811.00	2.60	3.95	51.07	201.73	2.75	3.26	8.97	210.69
Texas	Gb, FA, M	2,267.00	3.60	4.68	240.41	1,125.10	2.72	759.59	2,072.16	3,197.26

* All loss estimates based on yield plus quality.

** Acres.

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
WHEAT (Cont.)			Bu.							
Wyoming	PWC, Gh	215.00	1.34	1.58	1.25	1.97	2.50	1.35	3.37	5.35
					Subtotal	9,324.43			3,301.53	12,005.01
RICE			Cwt.							
Arkansas	RWW	438.00	-	-	-	-	0.35	438.00	153.30	153.30
	RSB	-	-	-	-	-	2.00	35.00	70.00	70.00
					Subtotal				223.30	223.30
RANGE GRASS			Tons							
South Dakota	WG, Gh	26,000.00	0.14	2.66	7.64	20.33	2.50	0.02	0.04	20.72
					Subtotal	20.33			0.04	20.72
ALFALFA (Hay)										
Arkansas	AlW, VC	55.00	-	-	-	-	2.00	30.00	60.00	60.00
Maryland	PA, AlW, LB, MS PB, PLL, GEH	70.00	0.66	26.40	7.00	184.80	6.00	28.00	168.00	352.80
North Dakota	Gh, A, AlW	1,344.00	0.10	1.80	35.00	63.00	2.25	25.00	56.25	119.25
Oklahoma	SAA, PA, AlW, Gh	575.00	0.35	12.12	131.73	1,596.60	3.00	35.02	105.05	1,701.65
South Dakota	Gh, PA, AlW, FB, Aw, Wbw, Cr	2,339.00	0.49	11.27	467.80	5,272.11	2.75	116.95	321.61	5,593.71
Tennessee	AlW	58.00	0.61	27.45	10.00	274.50	6.00	40.00	240.00	514.50
Virginia	AlW, PA, Slb	91.00	1.50	0.01	5.00	300.00	7.00	45.00	315.00	740.00
Wyoming	AlW, PA, LB	490.00	0.17	4.08	90.00	367.20	3.50	90.00	315.00	682.20
					Subtotal	8,058.21			1,580.91	9,764.11

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss Loss Per Acre (Units)	Yield Loss Loss Per Acre (dollars)	Yield Loss Non-treated Acres (1000)	Yield Loss Sub-total ($1000)	Control Cost Cost Per Acre (dollars)	Control Cost Treated Acres (1000)	Control Cost Sub-total ($1000)	Total Loss ($1000)
ALFALFA (Seed)			Lbs.							
Nebraska	W, Ww, BB, Wbw, C PB, L, Gh, A, Cws	33.00	7.00	2.03	2.00	4.06	2.75	8.00	22.00	26.06
Wyoming	AlW, LB, PA	5.50	7.00	2.56	0.06	1.47	8.00	0.09	7.56	9.03
					Subtotal	5.53			29.56	35.09
CLOVER - TIMOTHY			Tons							
Maryland	CoA, FB, GL, LB, MS, PB, W	205.00	0.21	6.15	4.00	24.60	3.50	6.00	21.00	45.60
					Subtotal	24.60			21.00	45.60
HAY										
Alabama	FA, AlW, Gh, A, CLW, WG, Ww, WFB, CEW, TB, T, L, Cr, W, Slb	791.00	0.24	6.84	190.00	1,299.60	6.00	10.00	60.00	1,359.60
Minnesota	Gh, PA, PL	3,231.00	0.05	0.98	404.60	397.64	2.00	1.00	2.00	399.64
Nebraska	Gh, GW, Cws, SAA, PB, PA, CoA, L, AlW, AC, Wbw, CR, Aws, W	4,418.00	0.11	2.31	375.00	866.25	2.75	75.00	206.25	1,072.50
					Subtotal	2,563.49			268.25	2,831.71
SOYBEANS			Bu.							
Alabama	TB, VbC, CL, BLB, CEW, LCB, MBB, GCw, StB, SL	609.00	2.35	6.58	70.00	460.00	3.80	230.00	874.00	1,334.00
Arkansas	CEW, SL	4,313.00	6.75	18.56	104.00	1,930.24	2.25	646.00	1,453.50	3,383.74
Minnesota	BLB, GCw, Gh	3,129.00	-	-	-	-	1.50	17.00	25.50	25.50
Maryland	BLB, CEw, MBB, GCW, T, Gh, JB	213.00	2.40	6.96	15.00	104.40	3.00	10.00	30.00	134.40
Nebraska	BLB, WG, MBB, Wbw, GCw, Gh, CR, Cws, Ww	812.00	0.66	1.82	20.00	36.40	3.00	5.00	15.00	51.40

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
SOYBEANS (Cont.)			Bu.							
North Dakota	Gh	176.00	0.90	2.39	2.00	4.78	2.25	8.00	18.00	22.78
South Dakota	Cws, BLB, GCw	255.00	5.30	14.20	3.57	50.69	2.75	1.53	4.21	54.90
Tennessee	CEW	1,229.00	0.02	0.06	-	-	6.00	15.00	90.00	90.00
Virginia	MBB, CEW	339.00	0.19	0.55	75.00	41.25	2.50	50.00	125.00	203.75
					Subtotal	2,627.76			2,635.21	5,300.47
PEANUTS			Lbs.							
Alabama	LCB, T, SCR, WFB, SpM, L, BA, FA, Aw	190.00	498.00	58.70	25.00	1,469.00	3.40	165.00	561.00	3,646.01*
Oklahoma	LCB, CEW, T	118.00	298.00	36.36	29.59	1,076.04	7.17	22.33	160.08	1,236.11
Texas	LCB, TSM	306.00	421.00	47.50	30.00	1,414.50	10.00**	200.00***	-	3,834.50
Virginia	SCR, CEW, T, M	102.00	90.00	12.24	1.00	12.24	7.75	101.00	782.75	800.00
					Subtotal	3,971.78			1,503.83	9,516.62
COTTON										
Arkansas	BW, Blw, PB, M	1,080.00	95.60	21.13	250.00	5,282.50	7.00	73.00	5,110.00	10,392.50
Oklahoma	BW, Blw, T, F	450.00	41.40	8.49	134.46	1,141.57	7.42	27.54	204.34	1,345.91
Tennessee	BW	390.00	24.00	5.52	20.00	165.60	15.00	10.00	1,500.00	1,666.20
	CEW	-	48.00	11.00	25.00	275.00	15.00	150.00	2,250.00	2,525.50
Texas	SpM, T, TBw, Blw, BW, Cws, BA, CLP, Gh, F	4,870.00	78.75	16.07	313.19	5,032.93	16.07	2,121.81	13,261.32	18,607.44
				Subtotal		11,622.60			20,075.66	34,537.55

* Includes 5 percent loss to treated acres due to inadequate controls on acres treated.

** Application cost plus insecticide estimated @ $2.50 acre application.

*** Estimate.

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss: Loss Per Acre (Units)	Yield Loss: Loss Per Acre (dollars)	Yield Loss: Non-treated Acres (1000)	Yield Loss: Sub-total ($1000)	Control Cost: Cost Per Acre (dollars)	Control Cost: Treated Acres (1000)	Control Cost: Sub-total ($1000)	Total Loss ($1000)
COTTON (Lint)			Lbs.							
Alabama	SpM, TpB, F, A, BW, BLw, TB, T, TSM	509.00	91.00	19.93	10.00	199.30	8.00	460.00	3,680.00	3,909.30XX
					Subtotal	199.30			3,680.00	3,909.30
COTTON (Seed)			Tons							
Alabama	BW, Blw, TB, T, TSM, SpM, TpB, F, A	509.00	0.08	4.13	10.00	21.03	#	460.00	#	21.03##
					Subtotal	21.03				21.03
TOBACCO			Lbs.							
Florida (Flue-cured)	TB, CL, Cws, TFB, Ww, GPA, TH	11.10	242.00	183.00	-	2,031.30	21.00	11.10*	233.10	2,497.50
(Shade-grown)	TB, CL, Cws, GPA, TFB	2.50	69.00	193.00	-	482.50	193.00	2.50	217.50	1,182.50
Maryland	GPA, TH, TFB, TB	27.50	106.00	84.48	7.00	633.60	15.00	20.00	300.00	933.60
Tennessee	TH	53.90	0.22	0.15	-	-	4.00	53.90	215.60	215.60
					Subtotal	3,147.40			966.20	4,829.20
SUGAR BEETS										
Minnesota	Wbw	146.80	-	-	-		4.00	0.07	2.80	2.80
Nebraska	Wbw, L, Gh, Ww, FB, SpM	78.60	1.40	16.24	12.00	129.92	3.50	7.00	24.50	154.42
North Dakota	SBRM, Ww, FB, Cws	92.00	0.30	5.40	10.00	162.00	4.25	20.00	85.00	247.00
Wyoming	SBRM, BWw, Ww	59.00	1.83	27.27	71.50	194.98	4.50	21.40	96.30	291.28
					Subtotal	486.90			208.60	695.50

# Charged to lint.

## Add 10% loss to treated acres because of inadequate controls on acres treated: .4066 tons x 10% x $50.80 x 460,000 = $949,530.00. Therefore, combined loss (line Q) = $970,561.00.

* All acreage needed control numbers.

XX Add 10% loss to treated acres because of inadequate controls on acres treated: 453 lbs. x 10% x .219 x 460,000 Acres = 4,563,000.00. Therefore, combined loss (line Q) = $8,472,500.00.

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
FLAX			Bu.							
North Dakota	Gh, AL, Ww, Cr	1,644.00	0.90	2.12	10.00	21.20	2.25	20.00	45.00	66.20
South Dakota	Cws	704.00	1.30	3.09	5.02	15.50	2.75	0.03	0.07	16.22
					Subtotal	36.70			45.07	82.42
SUNFLOWERS			Lbs.							
North Dakota	Ww, SuM, SfM, SfB	126.00	74.00	3.60	1.00	3.60	3.00	5.00	15.00	18.60
					Subtotal	3.60			15.00	18.60
POTATOES			Cwt.							
Alabama	Ww, A, PFB, PL, CPB, Cws	16.80	-	-	-	-	6.00	16.80	100.80	100.80
Minnesota	L, FB, CPB, A, Cws, Ww	95.80	14.00	24.64	1.80	44.35	10.00	94.00	940.00	984.35
Nebraska	CPB, L, PB, BB, PP, FB, Ww, Gh	9.50	22.80	26.22	0.09	23.60	6.20	5.10	31.62	55.22
North Dakota	L, Ww, FB, CPB	116.00	4.50	6.75	6.00	40.50	6.20	39.00	241.80	282.30
Wyoming	PP, Ww, FB	3.60	7.31	15.35	0.01	0.09	6.50	3.54	23.01	23.93
					Subtotal	108.54			1,337.23	1,446.60
SWEETPOTATOES										
Alabama	Ww, FB, SpW, WG, WFB	398.00	7.47	44.07	1.30	57.29	8.00	3.50	28.00	95.69
					Subtotal	57.29			28.00	95.69
TOMATOES										
Alabama	TFw, FB, A, CL, LMF, SpM, TPw, WFB, L	437.00	-	-	-	-	46.00	9.50	437.00	437.00
			Lbs.							
Hawaii	GHWf, LMF, CSpM, MF	0.02	2.47	421.00		84.20	0.02	0.02	34.00	118.20

Crop State	Pest Complex	Total Acres Produced (1000)	Yield Loss				Control Cost			Total Loss ($1000)
			Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total ($1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	
TOMATOES (Cont.)			Tons							
Maryland	A, CPB, L, TF, CF, ECB, TmHw	1.10	2.72	108.80	-	44.61	10.00	4.00	40.00	84.61
					Subtotal	128.81			511.00	639.81
BEANS (Field)			Cwt.							
Nebraska	WBC, MBB, Gh, BLB, L, A	86.00	2.16	16.20	15.00	243.00	3.50	35.00	122.50	365.50
Wyoming	MBB, FB	30.00	0.33	2.47	0.05	1.28	3.50	2.28	7.98	9.26
					Subtotal	244.28			130.48	374.76
BEANS (Snap)										
Alabama	MBB, BLB, CEW, TSM, SpM, LCB, T, SCR	1.30	-	-	-	-	13.00	1.30	16.90	16.90
			Lbs.							
Hawaii	CSpM, LMF, GHWf, BF, CRB	0.01	421.00	147.00	-	15.44	181.00	0.01	19.32	34.76
					Subtotal	15.44			36.22	51.66
PEAS			Tons							
Minnesota	PA, GCw	66.20	-	-	-	-	4.00	35.30	141.18	141.18
					Subtotal				141.18	141.18
WATERMELON			Lbs.							
Hawaii	CSpM, LMF, MF	11.90	1.64	161.00	-	31.16	199.00	0.02	37.81	68.97
					Subtotal	31.16			37.81	68.97
ONIONS (Green)										
Hawaii	LMF, BA, OT	0.01	3.00	0.07	-	54.08	39.00	0.01	2.92	57.00
					Subtotal	54.08			2.92	57.00

Crop State	Pest	Total Acres Produced (1000)	Yield Loss Loss Per Acre (Units)	 Loss Per Acre (dollars)	 Non-treated Acres (1000)	 Sub-total ($1000)	Control Cost Cost Per Acre (dollars)	 Treated Acres (1000)	 Sub-total ($1000)	Total Loss ($1000)
APPLES			Lbs.							
Maryland	A, AM, CdM, LR, M SpM	6,900.00	-	-	-	-	0.01	6,900.00	-	690.00
			Bu.							
Minnesota	AM, CdM	3.00	-	-	-	-	0.02	3.00	480.00	480.00
Virginia	Cdm, A, M, LR	465.00	-	-	-	-	0.01	-	2,232.00	2,232.00
					Subtotal					
PEACHES			Trees							
Alabama	PTB, LPTB, TSM, OFM, SJS, WPS	650.00	-	-	-	-	0.30	650.00	195.00	195.00**
			Lbs.							
Arkansas	OFM, SB, PTB, Sc	3.50	-	-	-	-	40.00	3.50	140.00	560.00
					Subtotal				335.00	755.00
PECANS			Trees							
Alabama	HS, PNC, StB, SpM, P, W, A, Sc	925.00	5.20	1.97	600.00	1,182.00	9.00	150.00	1,350.00	3,732.00
					Subtotal	1,182.00			1,350.00	3,732.00
BITTER MELONS			Lbs.							
Hawaii	GHWf, MF, CSpM	0.01	2.14	450.00	-	3.60	213.00	0.01	1.70	5.30
					Subtotal	3.60			1.70	5.30
CUCUMBERS										
Hawaii	MF, LMF, GHWf	0.02	2.47	345.00	-	51.75	130.00	0.02	19.50	71.25
					Subtotal	51.75			19.50	71.25
PASSION FRUIT (Processed)										
Hawaii	BSc, CSpM, Mb, BM	0.02	2.18	87.00	-	6.96	42.00	0.01	3.36	10.32
					Subtotal	6.96			3.36	10.32

** Add 8% loss to total treated acres because of inadequate controls on acres treated: 61 tree x 8% x 650,000 trees x $.0965 = $306,098.00. Therefore, combined loss (line Q) $501,098.00.

Crop State	Pest Complex	Total Acres Produced (Units)	Yield Loss Loss Per Acre (dollars)	Loss Per Acre (	Non-treated Acres (1000)	Sub-total ($1000)	Control Cost Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total ($1000)	Total Loss ($1000)
BROILERS			Birds							
Alabama	Hp, DB, M, Li	375,423.00	-	-			0.03	375.42	11,262.69	11,262.69
					Subtotal				11,262.69	11,262.69
HOGS			Lbs.							
Alabama	Hf, HL	1,700.00	18.00	3.60	100.00	360.00	1.25	1,600.00	2,000.00	2,360.00
					Subtotal	360.00			2,000.00	2,360.00
					Total	111,822.35			92,833.25	315,947.24

LEGEND

A - Aphids
AC - Alfalfa Caterpillar
ACw - Army Cutworm
AL - Aster Leafhopper
AlW - Alfalfa Weevil
AM - Apple Maggot
Aw - Armyworm
Aws - Armyworms
BA - Beet Armyworm
BB - Blister Beetles
BF - Bean Fly
BGM - Banks Grass Mite
BC - Black Cutworm
BHF - Blackheaded Fireworm
BL - Beet Leafhopper
BLB - Bean Leaf Beetle
BLM - Beet Leaf Miner
Blw - Bollworm
BM - Broad Mite
BSc - Barnacle Scale
BW - Boll Weevil
BWM - Brown Wheat Mite
BWw - Beet Webworm
C - Chalcids
CB - Chinch Bugs
CEw - Citrus Bud Mite
CdM - Codling Moth
CEW - Corn Earworm
CF - Cranberry Fruitworm
CFB - Corn Flea Beetle
CFF - Caribbean Fruit Fly
CG - Cranberry Girdler
CRM - Citrus Rust Mite

Cic - Cicadas
CL - Cabbage Looper
CLA - Corn Leaf Aphid
CLP - Cotton Leaf Perforator
CLW - Clover Leaf Weevil
CoA - Clover Aphid
CP - Corn Planthopper
CPB - Colorado Potato Beetle
Cr - Crickets
CR - Corn Rootworms
CRB - Chinese Rose Beetle
CSpM - Carmine Spider Mite
Cws - Cutworms
CWw - Cabbage Webworm
DB - Darkling Beetles
DM - Diamondback Moth
EAW - Egyptian Alfalfa Weevil
ECB - European Corn Borer
EGA - English Grain Aphid
F - Fleahoppers
FA - Fall Armyworm
FB - Flea Beetles
G - Grassbugs
Gb - Greenbug
GCw - Green Cloverworm
Gh - Grasshoppers
GHWf - Greenhouse Whitefly
GM - Ginger Maggots
GPA - Green Peach Aphid
GW - Garden Webworm
Hf - House Fly
HF - Hessian Fly
HL - Hog Louse

HS - Hickory Shuckworm
IC - Imported Cabbageworm
JB - Japanese Beetle
K - Katydids
L - Leafhoppers
LB - Lygus Bugs
LCB - Lesser Cornstalk Borer
LFB - Leaf-footed Bug
LMF - Leaf Miner Flies
LPTB - Lesser Peach Tree Borer
LR - Leaf Rollers
Li - Lice
M - Mites
MA - Melon Aphid
Mb - Mealybug
MB - Maize Billbug
MBB - Mexican Bean Beetle
MF - Melon Fly
MS - Meadow Spittlebug
NGSW - New Guinea Sugarcane Weevil
OD - Orangedog
OFF - Oriental Fruit Fly
OFM - Oriental Fruit Moth
OM - Onion Maggot
OT - Onion Thrips
P - Phylloxera
PA - Pea Aphid
PB - Plant Bugs
PFB - Potato Flea Beetle
PL - Potato Leafhopper
PP - Potato Psyllid
PNC - Pecan Nut Casebearer
PT - Potato Tuberworm

LEGEND
(Cont.)

PTB - Peach Tree Borer
PW - Pepper Weevil
PWC - Pale Western Cutworm
RA - Root Aphids
RAA - Rosy Apple Aphid
RFM - Red Flat Mite
RSB - Rice Stink Bug
RW - Root Weevils
RWW - Rice Water Weevil
S - Slugs
SAA - Spotted Alfalfa Aphid
SB - Stalk Borer
SBRM - Sugarbeet Root Maggot
Sc - Scales
SCB - Seedcorn Beetle
ScBo - Sugarcane Borer
SCM - Seedcorn Maggot
SCR - Southern Corn Rootworm
SCSB - Southern Corn Stalk Borer
SfB - Sunflower Beetle
SfM - Sunflower Maggots
SHw - Sweetpotato Hornworm

SJS - San Jose Scale
SI - Soil Insects
Slb - Spittle Bugs
SLM - Spinach Leaf Miner
SL - Soybean Looper
SM - Sorghum Midge
SMC - Saltmarsh Caterpillar
SN - Snail
SpM - Spider Mites
SpW - Sweetpotato Weevil
StB - Stink Bugs
StCB - Striped Cucumber Beetle
SuB - Sugarcane Beetle
SuM - Sunflower Moth
SVB - Squash Vine Borer
SW - Sod Webworms
SwCB - Southwestern Corn Borer
SWw - Sorghum Webworm
T - Thrips
Tb - Tomato Bug
TB - Tobacco Budworm
TC - Thistle Caterpillar

TCAH - Threecornered Alfalfa Hopper
TCM - Texas Citrus Mite
TFB - Tobacco Flea Beetle
TFw - Tomato Fruitworm
TH - Tomato Hornworm
TpB - Tarnished Plant Bug
TPw - Tomato Pinworm
Tsm - Tumid Spider Mite
TSM - Twospotted Spider Mite
VbC - Velvetbean Caterpillar
VC - Variegated Cutworm
W - Weevils
WCM - Wheat Curl Mite
WCR - Western Corn Rootworm
WBC - Western Bean Cutworm
Wbw - Webworms
Wf - Whitefly
WFB - Whitefringed Beetles
WG - White Grubs
WPS - White Peach Scale
WSM - Wheat Stem Maggot
WSSF - Wheat Stem Sawfly
Ww - Wireworms

A New Trap for Capturing Boll Weevils

J. E. Leggett and W. H. Cross [1]

Recently, a summary of the most efficient trap designs for capturing boll weevils (Anthonomus grandis Boheman) was published in USDA Coop. Econ. Ins. Rpt. 21(21): 367-368, 1971. Since then a new nonsticky trap, called the Leggett trap after its principal designer, has generally captured more boll weevils than any other trap design tested. The design of the new trap (Fig. 1) was based on a trap designed and previously tested by the senior author at Tallulah, Louisiana, following the suggestion by C. F. Rainwater (Entomology Research Division, Beltsville, Maryland) that a nonsticky trap was badly needed to replace the standard sticky wing trap. Similar trap designs had, also, been suggested earlier by E. B. Mitchell of this laboratory and by D. G. Bottrell (Tex. Agr. Expt. Sta., Lubbock).

The trap is constructed from a floral liner (papier-maché material) 11.5 in. high originally suggested by D. Whittam (Plant Protection, Hyattsville, Maryland) for constructing a sticky trap. In the nonsticky version the inverted floral liner is painted first with a white undercoat, then with daylight fluorescent Saturn Yellow (Day-Glo® [2] Color Corporation), and finally with a clear acrylic lacquer for waterproofing and to prevent fading of the Saturn Yellow.

The floral liner is capped with a screen cone held just off the liner with glass beads or other spacers with a small hole in the apex of the cone which opens into a 2-in.^{3} plastic box (or similar device) (Fig. 2). A grandlure wick (Hardee, et al. J. Econ. Ent., in press, 1971) is pinned to the top of the floral liner inside the screened cone.

The complete trap is mounted on a stake 3 to 4 ft. above the ground by inserting a nail through the top of the liner into a predrilled hole in the stake.

Boll weevils attracted by the grandlure land on the Saturn Yellow floral liner and crawl up under the lip of the screen cone. In their urgency to continue crawling upward they bypass the grandlure wick and become trapped in the box at the top of the screen cone. Weevils may be captured and kept alive or they may be killed with a small cube of Vapona® No-Pest strip placed in the box. In servicing large numbers of such traps the box and cone assembly at the top can be exchanged quickly and weevils counted in the laboratory. One trap should last one season. An obvious advantage of this trap over sticky traps is its high degree of selectivity for boll weevils. Often less than 1% of the total catch consists of other insects while the sticky traps soon are covered with all kinds of insects, necessitating periodic cleaning of the trap so that boll weevils may be captured and noted.

See illustrations on next page.

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[1] Entomology Research Division, ARS, U.S. Dept. Agr. Assistance of F. J. Benci in preparation of the figures is acknowledged.

[2] Trade names used in this article are solely for the purpose of providing specific information. This does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture over other products not mentioned.

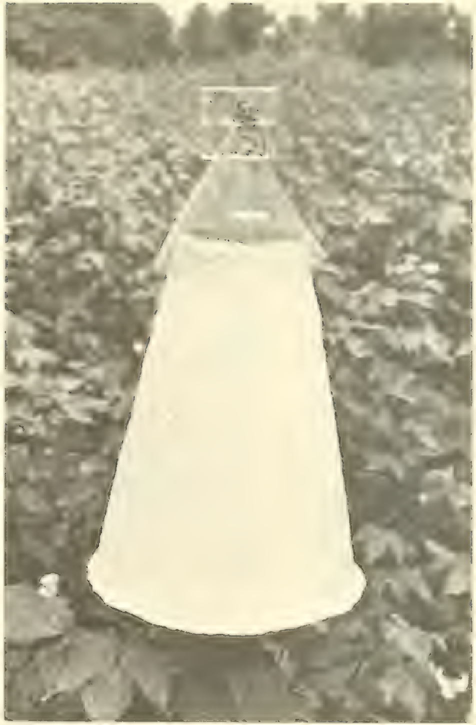

Fig. 1 The Leggett trap located in a cotton field.

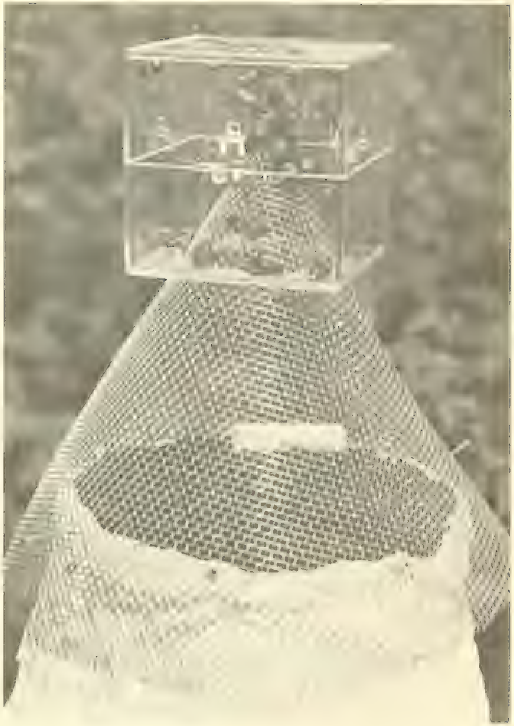

Fig. 2 Screened cone and plastic box assembly on top of the Leggett trap.

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
21(45-48):773-774, 1971

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The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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Hyattsville, Maryland 20782

Volume 21 December 31, 1971 Numbers 49 - 53

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG damaged small grain in Texas and Kansas. SPOTTED ALFALFA APHID heavy on some alfalfa in Arizona. (p. 777).

SCAB MITE outbreak involving several thousand head of cattle in Nebraska, Oklahoma, Texas, and New Mexico. (p. 779).

PINK BOLLWORM larval counts heavy in limited area of New Mexico. (p. 781).

Detection

New State records include APHIDS from Maryland and Virginia. (pp. 777, 779), a MOSQUITO from Pennsylvania, an OLETHREUTID MOTH, PALM LEAF SKELETONIZER, a PIERID MOTH, and a SNAIL from Alabama (pp. 778, 779), and SOYBEAN CYST NEMATODE from South Carolina (p. 781).

For new county and island records see page 781.

Special Reports

Cereal Leaf Beetle Quarantines. Map. Centerfold.

Distribution of Pepper Maggot. Map. (p. 784).

Reports in this issue are for weeks ending November 26 through December 17 unless otherwise indicated.

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Cereal Leaf Beetle Quarantines. Map. Centerfold.

NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK
MID-DECEMBER 1971 TO MID-JANUARY 1972

The National Weather Service's 30-day outlook for mid-December to mid-January is for temperatures to average below seasonal normals over the western half of the Nation. Above normal temperatures are indicated for the eastern half except for near to below normal in New England and the Upper Mississippi Valley. Precipitation is expected to exceed normal across the Nation except for near normal over the northwest quadrant and near to subnormal amounts in the South and along the eastern seaboard.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - NEW MEXICO - Light, ranged 1-2 per linear yard of barley at Roswell, Chaves County. (N.M. Coop. Rpt.). Light on barley at Carlsbad, Eddy County. Light and spotty on wheat near Clovis, Curry County. (Mathews). TEXAS - Moderate in Hardeman County field. Several growers applied controls. Some spraying in Dickens and Motley Counties. Light infestations in Archer, Jones, Foard, and Wilbarger Counties. Infestations primarily from oatfields. (Boring). Light to heavy on small grain in Motley County near Matador, in late November. Some controls applied. Infestations appeared to be widespread. (Pallmeyer). Infestations increased in Rolling Plains areas, ranged light to heavy. Some chemical control applied. Greenbugs reported killing 15 acres of wheat in a portion of Throckmorton County late this period. (Boring). OKLAHOMA - Counts of 20 and 3 per linear foot of wheat in 2 fields in Payne County. Infestations that ranged up to 150 per linear foot in Woodward County wheat December 3 declined due to cold weather. Populations remained unchanged in Payne County; ranged 5-30 per linear foot. Light in small grain in Garfield County. (Okla. Coop. Sur.). KANSAS - Damaging infestation in small area of Lincoln County, ranged 1,000 to 1,200 per row foot of wheat. About 25 percent stand loss occurred in one field. Some survey in Riley, Clay, Dickinson, and Wabaunsee Counties and ranged 10-50 per row foot with no apparent damage. (Gates et al.). Infestations noted on wheat in Washington and Jewell Counties. Economics unknown as of December 10. Expect limited problems as long as cold weather continues. (Bell). MISSISSIPPI - Light on wheat in Oktibbeha County. (Robinson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Counts of 870 per 100 sweeps of alfalfa in Yuma County, November 16. Ranged 110-800 per 100 sweeps of alfalfa at Yuma; one field with 4,800 per 100 sweeps with leaves turning purple. Ranged 25-350 at Parker, second week of period. Counts of 360 per 100 sweeps of alfalfa in Yuma County, third week of period. Counts of 540 per 100 sweeps in 2 Yuma County alfalfa fields; and 277 in Maricopa County field late in this period. (Ariz. Coop. Sur.). ARKANSAS - Still light, ranged 25-50 in 100 sweeps in northwest areas. (Boyer). MINNESOTA - Specimen found on alfalfa in Dakota County. Determined by E. Cook and A.G. Peterson, in August. This is a new county record. (Minn. Pest Rpt.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Heavy larval populations and low levels of disease, in combination with favorable overwintering conditions, could lead to another outbreak of first-brood borers in 1972 in the south and central districts. (Hill et al.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - NEW MEXICO - Infested 80 percent of stalks checked at Clovis, Curry County. (Mathews).

A WEEVIL (Anacentrinus deplanatus) - MISSISSIPPI - Adults, larvae, and pupae collected from roots of grain sorghum in Quitman County on July 28 and October 28. Determined by R.E. Warner and D.M. Anderson. This is a new county record, also new host record. Infestation involved 300 acres and plants appeared to need moisture. Damage moderate. (Robinson).

SMALL GRAINS

AN APHID (Rhopalosiphum padi) - VIRGINIA - Collected on wheat in Botetourt County on May 7, 1970 by W.A. Allen. Determined by L.M. Russell. This is a new State record. (Allen). OKLAHOMA - First of season, less than 1 per linear foot in wheat in Payne County. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Averaged 20 per linear foot of wheat in Payne County. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

CHINCH BUG (Blissus leucopterus leucopterus) - ILLINOIS - Surveys indicate populations about 3 times heavier than 1970; still below economic levels. (Ill. Ins. Rpt.).

A PLANTHOPPER (Delphacodes propinqua) - LOUISIANA - Heavy, adults 5,000 per 100 sweeps, on common and coastal Bermuda grass in central and northern areas. (Newsom).

FIRE ANT (Solenopsis geminata) - TEXAS - Numerous infestations in Brazos, Robertson, Wilson, and Bee Counties. (Cole).

A SNAIL (Rumina vecollata) - ALABAMA - Abundant in local area at Montgomery, Montgomery County, October 25, 1971. Collected by C. Elliott and T. Wilbourn. Determined by J.A. Pendergrass. This is a new State record. Occurs in Texas and Mexico. (McQueen).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - OKLAHOMA - Populations decreased in alfalfa in Stephens County; larvae and adults still light. (Okla. Coop. Sur.). KENTUCKY - Eggs averaged 154.4 per square foot in Fayette County field. (Barnett).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Ranged 0-20 per 100 sweeps of alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

A GEOMETRID MOTH (Semiothisa punctolineata) - ARKANSAS - Larvae collected from alfalfa in October from Washington County reared to adults. Determined by E.P. Rouse. First collections in State from alfalfa. (Boyer).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Ranged 30-300 at Yuma and 50-500 per 100 sweeps of alfalfa at Parker, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Nymphs and adults ranged 15-25 per 25 sweeps in Lea County alfalfa. (Mathews).

COLE CROPS

DIAMONDBACK MOTH (Plutella xylostella) - SOUTH CAROLINA - Larval damage heavy on 20 acres of cabbage on James Island, Charleston County. (Creighton).

CITRUS

COFFEE BEAN WEEVIL (Araecerus fasciculatus) - FLORIDA - Larvae and adults collected in fruits of sweet orange in groves at Leesburg, Lake County, November 22 (Levan et al.). This pest secondary invader of citrus fruits. Special survey underway. (Fla. Coop. Sur.).

COTTONYCUSHION SCALE (Icerya purchasi) - CALIFORNIA - Nymphs 6 per leaf on citrus nursery stock at Hanford, Kings County. (Cal. Coop. Rpt.).

CITRUS RED MITE (Panonychus citri) - ARIZONA - Counts of 5 per leaf on November 12 declined to 3.4 on November 23 in lemon grove on Yuma Mesa, Yuma County. Most groves surveyed with fewer counts. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - CALIFORNIA - Nymphs 20 per leaf on avocado nursery stock in Ventura, Ventura County. (Cal. Coop. Rpt.).

AN ARMORED SCALE (Hemiberlesia lataniae) - CALIFORNIA - Adults infested avocado nursery stock in Ventura, Ventura County. Can be serious on avocado. (Cal. Coop. Rpt.).

LONGTAILED MEALYBUG (Pseudococcus longispinus) - CALIFORNIA - Adults infested avocado nursery stock in a nursery in Saticoy, Ventura County. (Cal. Coop. Rpt.).

ORNAMENTALS

A PIERID MOTH (Phoebis sennae) - ALABAMA - Larvae collected at Faunsdale, Marengo County, October 11, 1971, by C. Miller from Cassia alta. Determined by D.M. Weisman. This is a new State record. (McQueen).

PALM LEAF SKELETONIZER (Homaledra sabalella) - ALABAMA - Larvae ranged 2-10 per leaf skeletonizing palms on Dauphin Island in Mobile County April 16, 1971. Collected by W.T. Seibels. Determined by D.M. Weisman. This is a new State record. (McQueen).

CHINESE ROSE BEETLE (Adoretus sinicus) - OREGON - Single live adult intercepted at Salem, Marion County; in suitcase. Apparently trapped in luggage in Hawaii. Identified by R.L. Westcott. (Larson).

FOREST AND SHADE TREES

AN APHID (Cinara pinivora) - MARYLAND - Specimens collected from Pinus taeda at Beltsville, Prince Georges County, by D. Raine on June 6, 1971. Determined by A.N. Tissat. This is a new State record. (U. Md., Ent. Dept.).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - MISSISSIPPI - Indications of a buildup indicated in pine forests in southern areas. Populations increasing in size and number. (Echols).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - GEORGIA - Symptoms of Dutch elm disease noted June 10 in Clarke County, confirmed. Apparently widespread throughout county. (Franklin).

AN OLETHREUTID MOTH (Rhyacionia bushnelli) - CALIFORNIA - Pupae occurring in tips of Monterey pine (Pinus radiata) in nursery stock in Wasco, Kern County. This is a new county record. Pupae 40 and one larva taken from branch terminals from 2 Monterey pine at El Cajon, San Diego County. Damage severe and terminals brown. Unspecified hymenopterous parasites taken from pupal cases. (Cal. Coop. Rpt.).

AN OLETHREUTID MOTH (Paralobesia liriodendrana) - ALABAMA - Larvae taken from tulip poplar trees at Shorter, Macon County, October 18, 1971 by H.F. McQueen. Determined by D.M. Weisman. This is a new State record. (McQueen).

MAN AND ANIMALS

SCAB MITE (Psoroptes equi) - NEBRASKA - Estimated 10,000 head of cattle in 19 counties under treatment as of December 3. Infestation originated from 260 steers shipped from out of State and mixed with native cattle. (Nordstrom et al.). OKLAHOMA - Total of 16,650 head of cattle involved from 2 Cimmarron Counties on 1 Greer County premiss in November. TEXAS - During same period total of 8 premises involved and 40,800 cattle in Dallam, Moore, Donley, Motley, Deaf Smith, Childress, and Collingsworth Counties. NEW MEXICO - In Chavez County, total of 10,000 head of cattle involved during same period. (Anim. Health).

CATTLE LICE (Haematopinus spp.) - OKLAHOMA - First infestations of season of mainly Haematopinus eurysternus (shortnosed cattle louse) reported from Mayes County. Few head of cattle in few herds infested. Populations scattered and moderate in Payne and Noble Counties and scattered and light in Woodward County. Usually only few cows in herd infested. Light to moderate on cattle in Pontotoc County and moderate in Garfield County. (Okla. Coop. Sur.). TEXAS - H. eurysternus light to moderate on cattle from Wilbarger County. (Boring).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Ranged 0-10 per head in backs of cattle in Noble and Payne Counties. Remains light in Choctaw County. Last of period ranged 0-15 (average 8 per head) in cattle in Payne and Noble Counties. Light to moderate in Pontotoc County and light in Choctaw County. (Okla. Coop. Sur.).

SCREWWORM (Cochliomyia hominivorax) - Total of 16 cases reported in U.S. November 21 to December 11 as follows: TEXAS - 16. Total of 770 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 69, Chihuahua 292, Coahuila 132, Nuevo Leon 68, Tamaulipas 219. Total of 86 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 51,600,000; Mexico 188,360,000. (Anim. Health).

A MOSQUITO (Aedes riparius) - PENNSYLVANIA - Larva collected at Indian Gap Military Reservation, on September 1, 1971 by preventive medicine personnel. Determination by A. Stone. This is a new State record. (Tompkins).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - ALABAMA - Specimen collected in Mobile County in 1970 and reported March 23, 1971. Collected by W.T. Seibels and B. Brackin. Determined by W.T. Seibels. This is a new county record. (McQueen).

A FRESH-WATER SNAIL (Melanoides sp.) - FLORIDA - Specimens recovered from aquatic plants at Deerfield Beech, Broward County, June 16, 1971, by J.A. Reinert. This snail occurs in Southeast Asia where it is an alternate host for Opisthorchis sinensis (a trematode) which causes opisthorchiasis in humans. This disease is widespread in China, Japan, Vietnam, and parts of India. Human infections acquired through eating raw fish. Severe cases fatal. (Esser).

KEYS STRIPED SCORPION (Centruroides keysi) - FLORIDA - Five adults and 2 immatures collected under rocks in pine and cypress swamp at Ochopee, Collier County, November 12, 1971 by H.V. Weems, Jr. and W.A. Tomick. This is first mainland record. (Weems).

HOUSEHOLDS AND STRUCTURES

A DERMESTID (Anthrenus museorum) - IOWA - Collected in Indianola, Warren County, November 16. Determined by R. Miller. This is a new county record. (Iowa Ins. Sur.).

PACIFIC DAMPWOOD TERMITE (Zootermopsis angusticollis) - MICHIGAN - Numerous live specimens intercepted at Detroit, Wayne County, in peat moss packed around lily bulbs. Controls planned. (Sauer).

STORED PRODUCTS

FLAT GRAIN BEETLE (Cryptolestes pusillus) - NORTH DAKOTA - Adults and larvae of this species and Tribolium confusum (confused flour beetle), T. castaneum (red flour beetle) infested top 3 feet of 45,000 bushels of stored wheat in Grand Forks County at rate of 164 specimens per 1 pint sample. Fifty percent C. pusillus 48 percent T. confusum, and 2 percent T. castaneum. The top 2-3 feet of wheat wet and heating. (Brandvik).

Used Harvesting Machinery	Year-round
Fodder and Plant Litter	Year-round
Soybeans (1), (3)	September 1-March 15
Scotch, red, and Austrian Pine	

CEREAL LEAF BEETLE QUARANTINES

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AND CANADA DEPARTMENT OF AGRICULTURE
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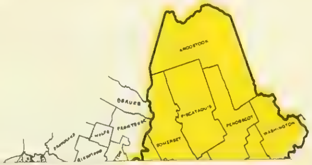

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2. PERMIT REQUIRED FOR MOVEMENT FROM RED TO YELLOW EXCEPT FOR CERTAIN ARTICLES OR DURING CERTAIN PERIODS (SEE REVERSE).

GPO [illegible]

SEE REVERSE SIDE FOR LIST OF REGULATED ARTICLES

REVISED NOVEMBER 19, 1971

CEREAL LEAF BEETLE QUARANTINES

U.S. DEPARTMENT OF AGRICULTURE
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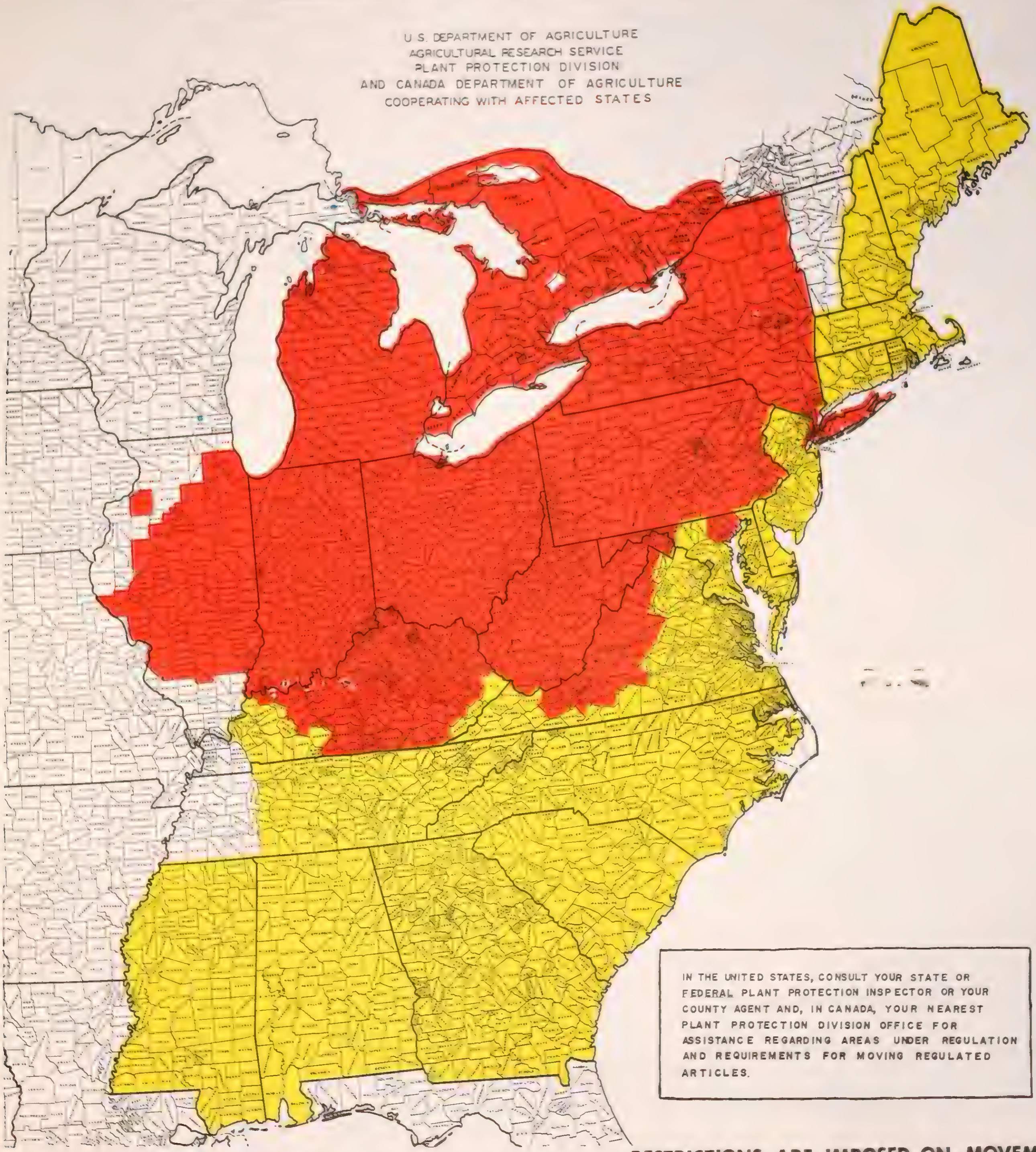

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COUNTIES PARTIALLY COLORED RED ARE PARTIALLY REGULATED.

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🟦 **NECESSARY REGULATORY SERVICES PROVIDED**

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2. PERMIT REQUIRED FOR MOVEMENT FROM RED TO YELLOW EXCEPT FOR CERTAIN ARTICLES OR DURING CERTAIN PERIODS (SEE REVERSE).

SEE REVERSE SIDE FOR LIST OF REGULATED ARTICLES

REVISED NOVEMBER 19, 1971

REGULATED ARTICLES AND THEIR CERTIFICATION PERIODS ARE AS FOLLOWS:

Crop or Article	Certification Period
Small Grains such as Barley, Oats, and Wheat (1)	June 1-November 30
Corn (Shelled corn is NOT regulated)	
Fresh Market (sweet corn)	Year-round
Ear Corn, other than sweet corn	August 1-March 31
Grass and Forage Seed (1)	Year-round
Hay (except marsh hay) (2)	May 1-January 15
Straw and Marsh Hay	June 1-February 28
Sod	Year-round

REDLEGGED HAM BEETLE (*Necrobia rufipes*) - TENNESSEE - Infested smoke room of meat-packing house in Putman County. Controls applied. (Bruer). VIRGINIA - Medium infestation in hams in Loudoun County on December 2. Collected by W.J. Brown. (Allen).

BENEFICIAL INSECTS

A PYRALID MOTH (*Parargyractis fulicalis*) - VIRGINIA - Adults collected by D.L. Barnes on trunk of Elms in Scott County on September 3. Determined by D.C. Ferguson. Larvae feed on aquatic vegetation in streams and lakes. (Allen).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Larval counts of lint cleaners in Yuma County cotton gins per bale: Parker Valley 76, Union 28, Somerton 70, Yuma 97, Blaisdel 2, Roll 92, Blaisdel 2, Yuma 8, and Somerton 30. Larval counts per bale at lint cleaners in Cochise County cotton gins November 30 to December 8: Bowie 3, Elfrida 3, Kansas Settlement 3, San Simon 5, and Stewart Area 3. (Ariz. Coop. Sur.). NEW MEXICO - Counts in cotton bolls ranged 64-100 percent in several fields in southern Eddy County. (Mathews). Spotty in top bolls in southern Dona Ana County. All larvae found alive. (N.M. Coop. Rpt.). OKLAHOMA - Surveys during November show general increase in central counties. Populations declined in extreme eastern, southeastern, and western counties. Green bolls ranged 25-50 percent infested in Bryan, Garvin, Cleveland, McClain, Payne, and Pawnee Counties. Lint cleaner inspections in these counties positive. Light infestations on lint cleaners in Beckham, Custer, Dewey, Haskell, Wagoner, and McCurtain Counties. Green bolls from 6 fields in McCurtain and Choctaw Counties negative. One larva found in 100 green bolls from a green-boll trap at gin in McCurtain County. (Okla. Coop. Sur.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - SOUTH CAROLINA - Cysts recovered from farm at Loris, Horry County, November 9, 1971 by J.L. McKee. Determined by V.H. Owens, confirmed by A.M. Golden. This is a new State record. (PP). MISSISSIPPI - Cysts recovered in Itawamba County on September 9 by G.B. Worley. This is a new county record. Determinations by V.H. Owens, confirmed by A.M. Golden. (PP).

TULIPTREE SCALE (*Toumeyella liriodendri*) - CALIFORNIA - Surveys showed 2 new infested properties in Sonoma County this period. (Cal. Coop. Rpt.).

WEST INDIAN SUGARCANE ROOT BORER (*Diaprepes abbreviatus*) - FLORIDA - Found feeding on hairy indigo at Plymouth, Lake County, in association with citrus. This is a new host. (PP).

DETECTION

New State Records - AN APHID (*Cinara pinivora*) - MARYLAND - Prince Georges County. (p. 779). AN APHID (*Rhopalosiphum padi*) - VIRGINIA - Botetourt County. (p. 777). A MOSQUITO (*Aedes riparius*) - PENNSYLVANIA - Indian Gap Military Reservation. (p. 780). AN OLETHREUTID MOTH (*Paralobesia liriodendrana*) - ALABAMA - Macon County. (p. 779). PALM LEAF SKELETONIZER (*Homaledra sabalella*) - ALABAMA - Mobile County. (p. 779). A PIERID MOTH (*Phoebis sennae*) - ALABAMA - Marengo County (p. 779). A SNAIL (*Rumina vecollata*) - ALABAMA - Montgomery County. (p. 778). SOYBEAN CYST NEMATODE (*Heteroda glycines*) - SOUTH CAROLINA - Horry County. (p. 781).

New County and Island Records - BROWN RECLUSE SPIDER (*Loxosceles reclusa*) ALABAMA - Mobile (p. 780). A CADDIS FLY (*Cheumatopsyche analis*) HAWAII - Kauai (p. 782). A DERMESTID (*Anthrenus museorum*) IOWA - Warren (p. 780). AN OLETHREUTID MOTH (*Rhyacionia bushnelli*) CALIFORNIA - Kern (p. 779). SOYBEAN CYST NEMATODE (*Heterodera glycines*) MISSISSIPPI - Itawamba (p. 781). SPOTTED ALFALFA APHID (*Therioaphis maculata*) MINNESOTA - Dakota (p. 777). A WEEVIL (*Anacentrinus deplanatus*) MISSISSIPPI - Quitman (p. 777).

REGULATED ARTICLES AND THEIR CERTIFICATION PERIODS ARE AS FOLLOWS:

Crop or Article	Certification Period
Small Grains such as Barley, Oats, and Wheat (1)	June 1-November 30
Corn (Shelled corn is NOT regulated)	
Fresh Market (sweet corn)	Year-round
Ear Corn, other than sweet corn	August 1-March 31
Grass and Forage Seed (1)	Year-round
Hay (except marsh hay) (2)	May 1-January 15
Straw and Marsh Hay	June 1-February 28
Sod	Year-round
Used Harvesting Machinery	Year-round
Fodder and Plant Litter	Year-round
Soybeans (1), (3)	September 1-March 15
Scotch, red, and Austrian Pine Christmas Trees (4)	Year-round

(1) Small grains (except oats and barley), grass and forage seed, and soybeans cleaned to meet State or Canadian seed sales requirements are exempt from certification and permit requirements.

(2) Pelletized hay is exempt from certification and permit requirements.

(3) Soybeans if transported in covered vehicles and moved to designated plants are exempt from certification and permit requirements.

(4) Scotch, red, and Austrian pine Christmas trees are exempt from certification and permit requirements if moved to yellow areas.

HAWAII INSECT REPORT

New State Record - Nymphs and adults of DAYLILY THRIPS (*Frankliniella hemerocallis*) collected from *Hemerocallis* spp. at Honolulu, Oahu, by K. Sakimura in September 1969. Determined by K. Sakimura. Since 1948, collected in Wisconsin, Florida, Maryland, and New York. (Sakimura).

Sorghum - Larvae of a CHRISTMAS BERRY WEBWORM (*Cryptoblabes aliena*) moderate on sorghum panicles in 250 acres; SORGHUM MIDGE (*Contarinia sorghicola*) moderate on immature seedheads in 150 acres in adjacent planting on Kauai and CORN LEAF APHID (*Rhopalosiphum maidis*) trace in same area. (Kawamura).

Man and Animals - Trapped 884 VEXANS MOSQUITO (*Aedes vexans nocturnas*) and 1,432 SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) in 55 light traps on Oahu during November. *Aedes* ranged 0-408 per trap at Punaluu. *Culex* ranged 0-331 per trap at Waipahu. (Mosq. Cont. Br., Dept. of Health).

Forest and Shade Trees - BLACK TWIG BORER (*Xylosandrus compactus*) moderate in kiawe trees (*Prosopis pallida*) at Kona, Hawaii; caused terminal dieback. Also severe in kawau tree (*Ilex anomala*) at Pupukea Paumalu Forest Reserve, Oahu. A new host record. (Yoshioka, Gagne). A PSYLLID (*Trioza* sp.) moderate to heavy on leaves of *Metrosideros collina* at Wahiawa Forest Reserve and at Mt. Kaala, Oahu. At Wahiawa, about 60 percent of terminal leaves with as many as 20 galls per leaf; average 11. Average 7 galls per leaf at Mt. Kaala. (Au et al.).

General Vegetables - Larvae of BEET ARMYWORM (*Spodoptera exigua*) light for second week on young broccoli on Oahu; this species usually associated with green onions in Hawaii. Larvae and pupae of LEEK MOTH (*Acrolepia assectella*) heavy in 5,000 square feet of green onion at Makawao, Maui. (Miyahira). CORN EARWORM (*Heliothis zea*) moderate (40-60 percent of young corn with 1 or more early instar larvae on silks or ear tip) in small planting at Waralua. Larvae trace in 5,000 square feet of bell peppers at Pupukea, Oahu. Controls planned. (Kawamura).

Beneficial Insects - Percent of internodes of *Tribulus terrestris* and *T. cistoides* found to be infested or damaged by a PUNCTUREVINE STEM WEEVIL (*Microlarinus lypriformis*) at Kihei, Maui; 36 (33 internodes) and 0 (50 internodes) respectively. Puncture vine scarce on this island. At Kaalualu, Hawaii, of 102 internodes of *T. cistoides* examined 64 percent affected. (Miyahira, Yoshioka). Larvae of BLACKBERRY SKELETONIZER (*Schreckensteinia festaliella*) and a TORTRICID MOTH (*Apotoforma* sp.) light to moderate in 25 acres of blackberry at Waikamoi, Maui. (Miyahira). Emergence of A BRACONID (*Meteorus laphygmae*) light from larvae of *Melipotis indomita* (a noctuid moth) collected from kiawe (*Prosopis pallida*) trees on Maui during October. (Rose).

Miscellaneous Insects - Larvae of a GEOMETRID MOTH (*Semiothisa santaremaria*) heavy on *Leucaena leococephala*, *Pithecellobium dulce* and *Acacia farnesiana* in 1,500 acres of pastures and wastelands at Mana, Kekaha, Waimea, Makaweli, and Hannapepe, Kauai. Larvae of A NOCTUID MOTH (*Semiothisa samtaremaria*) and KOA HAOLE LOOPER (*Anacamptodes fragilaria*) heavy in 500 acres of koa haole at Waimea and Kekeha, Kauai, defoliation heavy. (Sugawa). Adults of a CADDIS FLY (*Cheumatopsyche analis*) taken on Kauai for new island record. (Howarth).

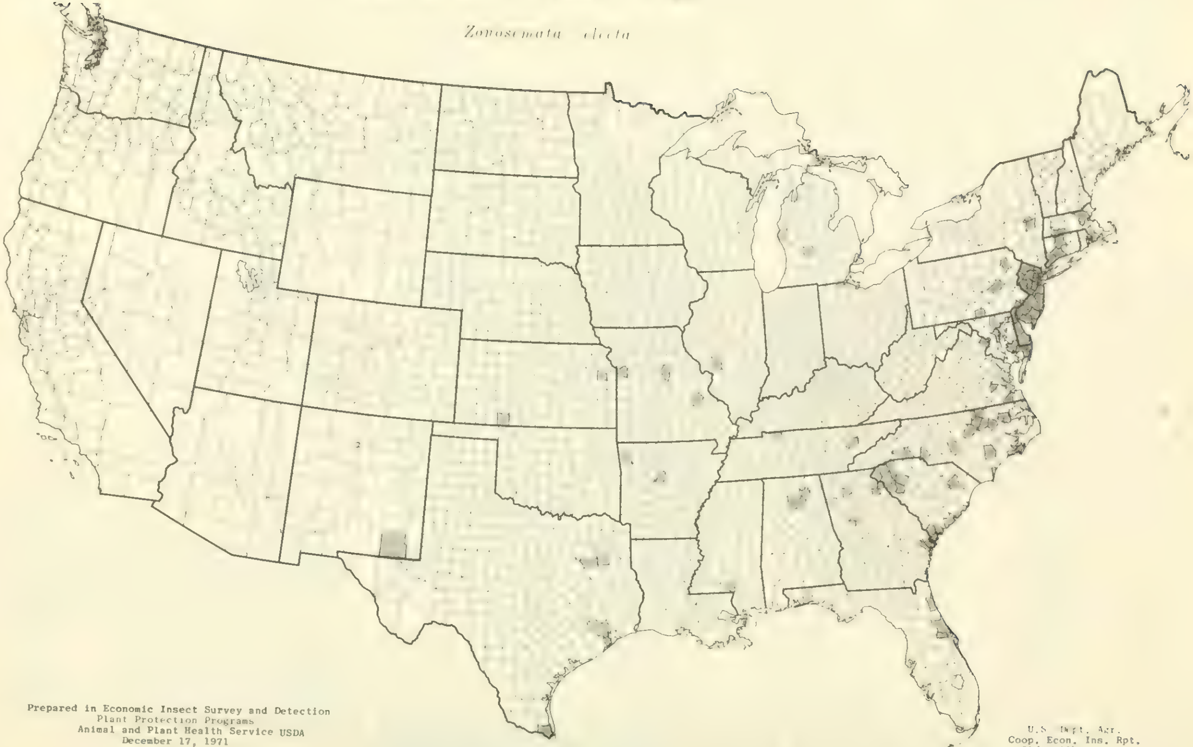
General Pests - CORN EARWORM (*Heliothis zea*) larvae heavy, about 80 percent of ears infested in one acre of seed corn at Kihei, Maui. Light to moderate in 3 acres of roses at Waianae, Oahu; as much as 30 percent of mature buds infested with early instar larvae. (Ah Sam et al.).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	*Agrotis ipsilon* (black cutworm)	*Estigmene acrea* (saltmarsh caterpillar)	*Euxoa auxiliaris* (army cutworm)	*Faronta diffusa* (wheat head armyworm)	*Feltia subterranea* (granulate cutworm)	*Heliothis virescens* (tobacco budworm)	*H. zea* (bollworm, corn earworm, tomato fruitworm)	*Laspeyresia pomonella* (codling moth)	*Loxostege commixtalis* (alfalfa webworm)	*Loxostege rantalis* (garden webworm)	*Loxostege sticticalis* (beet webworm)	*Manduca quinquemaculata* (tomato hornworm)	*Manduca sexta* (tobacco hornworm)	*Ostrinia nubilalis* (European corn borer)	*Peridroma saucia* (variegated cutworm)	*Pseudaletia unipuncta* (armyworm)	*Spodoptera exigua* (beet armyworm)	*Spodoptera frugiperda* (fall armyworm)	*Spodoptera ornithogalli* (yellowstriped armyworm)	*Trichoplusia ni* (cabbage looper)	Crops
FLORIDA																								
Gainesville 11/19-23			BL	2															4			3		
" 11/24-12/2			BL					1											5			1	1	
" 12/3-9			BL	2				7		2									1			4		
" 12/10-16			BL					2		1								16	1			16		
MISSISSIPPI																								
Stoneville 11/19-12/2	29-67	2.19	2BL	58				16		1									46	55	39	7		
" 12/3-9	39-61	3.50	2BL	56				12										2	37	4	1			
" 12/10-16	39-73	2.47	2BL	55				31		1									46	1	9			
TEXAS																								
Waco 11/18-26			BL	5				37										53	77	37	8	2		

Distribution of Pepper Maggot

Zonosemata electa



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ANIMAL AND PLANT HEALTH SERVICE

PLANT PROTECTION AND QUARANTINE PROGRAMS

ECONOMIC INSECT SURVEY AND DETECTION STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

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* Carried as Metaphycus portoricensis in Vol. 21.

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* Also carried as Croesia semipurpurana and in error as Argyrotaxa semipurpurana in Vol. 21.

* Carried in Volume 21 as Dectes sayi in error.

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* Also carried as Prodenia ornithogalli
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